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LECTURES

ON THE

THEORY AND PRACTICE OF MIDWIFERY,

DELIVERED AT GUY'S HOSPITAL BY

DR. BLUNDELL.

LECTURE XXXV.

Delivery after the Death of the Mother.

You are not to suppose, Gentlemen, that as soon as the life of the mother becomes extinguished, the life of the fœtus is extinguished also; for it is a well-ascertained fact, that children will continue to live in utero for minutes, or even half an hour, after the maternal circulation is stopped. When the death of the mother creeps on her gradually, whether from bleedings or other causes, the chance of saving the child by removal from the body of its deceased parent, is exceedingly small; nor is it unlikely in these cases, that the fœtus dies before its parent; but where the death of the mother occurs in consequence of apoplexy, or some sudden accident incident to the most vigorous health, the probability that the fœtus may survive the mother is much greater. What may be the longest time that the child may continue to live in the liquor amnii, after the circulation of the mother is stopped, is a very interesting problem, well deserving of your consideration. In the country, more especially in a farming district, you may have an opportunity of making your observations on the sheep or cow when with young; and after death takes place, whether by accident or intentionally, it would be easy to observe, in these cases, how long a term afterwards the fœtus is capable of resuscitation. Facts are not wanting, which may encourage us to hope, that the child, within the body of the deceased parent, may live even for a considerable time. To Mr. Moseley I am indebted for the history of a *heifer* which, in the end of its pregnancy, died in consequence of some accident in a farm yard; in about three quarters of an hour afterwards it was flead and embowelled, during which operation it was observed, that there was some little motion in the uterus; this led to closer inspection, when, on laying open the abdomen and uterus, the calf was taken out in a state of suspended animation, from which, in the course of a few hours, it became completely resuscitated. Thus, then, Mr. Moseley's statement, which, I trust, is to be relied upon in all its parts, furnishes us with an interesting example of the prolongation of the life of the fœtus for three quarters of an hour after the vitality of the parent was become extinct.

It sometimes happens that a fœtus is still-born, and in that condition it may remain dead, to appearance, for twenty, thirty, or forty minutes, or even for a longer time than this. Now, while it is in this still condition, there is no obvious respiration or circulation, yet, nevertheless, though it is in a state very nearly approximated to that of a person after death, it is now and then very unexpectedly resuscitated. I have myself resuscitated a child that had been lying in this state, without any obvious signs of active life, for more than twenty minutes together; and Mr. Tomkins, of Yeovil, in Somersetshire, a gentleman formerly of this class, gave me a case in which a fœtus, after lying still for more than an hour, as measured by the watch, was nevertheless resuscitated by the artificial respiration; and, as Mr. Tomkins is a very accurate observer, I can rely on his statement with more than average confidence. Now if a fœtus lies in this way after birth, apparently dead for an hour, to be resuscitated, however, by artificial respiration, I think it is not unreasonable to hope that a fœtus might remain equally long in utero, without, however, getting beyond the reach of resuscitation; if by the Cæsarian operation, or otherwise, it could be brought forth, so as to secure a trial of the remedies which I shall presently enumerate. To be short, then, in the present state of our facts and knowledge, we may reasonably hope, if a child be taken out of the uterus within half an hour, or an hour after the death of the mother, and

more especially if the mother have perished by a sudden and violent death, that the life of that child may be preserved. Some three or four years ago, a woman, in the end of her pregnancy, crossing a street near this Hospital, was run down by one of the stages; the wheel of which passing over the body, divided the liver into two pieces, death following in the course of a very few minutes afterwards. This poor creature was brought into the Hospital, and Mr. Green, who chanced to be going round at the time, gave it as his opinion, that the Cæsarian operation ought to be performed. I was accordingly sent for, to give a little obstetric assistance, when, within thirteen minutes from the last respiration of the deceased, the abdomen was laid open; and the child was taken out, within fifteen minutes from the last respiration. The lungs were inflated by means of the tracheal pipe—my principal resort, the warm bath also being afterwards tried; in thirteen minutes more, the child first began to breathe a little, and the umbilical chord began to act; and by perseverance in this method, the fœtus was completely resuscitated; it lived for a day or two, and would probably have been living still, had it been more judiciously managed by those to whose care it was committed. Should you be called, then, to a case in which the parent had suddenly deceased but a short time before, it is then highly probable that the fœtus is alive; and should motion be perceived in the abdomen, there can then be no further doubt, and, of course, removal must be made the subject of deliberation. Now there are two ways in which, after the death of the mother, the child may be taken away; the one is by making an opening into the abdomen with a razor, or any other convenient instrument, this method, on the whole, being the shortest and the best; the other turns on the introduction of the hand into the uterine cavity, and the abstraction of the fœtus by the operation of turning. This operation may be easily performed here, as the passages may be dilated with more force and celerity, provided the mother be really and thoroughly dead; though even in these cases, such is my strong dislike to obstetric violence, that I would not employ a greater degree of effort than is absolutely necessary in order to get the fœtus away. Arte, non vi. And here let me observe, that it is only when the woman is dead beyond all doubt and controversy, that deliveries in these wretched cases ought, I conceive, for one moment to be thought of. Who that has a heart of flesh in his bosom, could coolly sit down in a real case to argue for the advantage to be derived to the fœtus from the performance of the Cæsarian incisions, before the maternal life is totally and beyond all doubt extinct? Who that has a heart of flesh in his bosom, could have firmness sufficient to perform his operations under such circumstances? Who could look on the dying eyes of his patient, without suffering the knife to drop from his hand? Who would himself like to be disturbed in such a moment? As long as men are surgeons, surely surgeons may continue to be men; and while they make it their duty to subject their feelings to their reason, doubtless it is still their duty to act under that moderated influence of the feelings which gives the last finish to the manly character. I like the sentiment of the lively Figaro, "Elle a raison, ma mere; elle a raison, raison, toujours raison! Mais accordons, maman quelque chose à la nature; on en vaut mieux après."

Of Delivery and latter Gestation, in conjunction with Pregnancy.

In the end of pregnancy, you will sometimes find inflammations taking place in the thorax, abdomen, or head, more especially of the thorax and abdomen. If those inflammations are unattended with any extraordinary symptoms, which probably they will be, you should treat them precisely in the same manner as you would an inflammation in which there is no pregnancy; because, though it may be true your remedies, and more especially large bleedings or purgings, may not altogether suit the pregnant condition, yet, nevertheless, where you have inflammation of the thorax or abdomen, it is absolutely necessary that such inflammation should be subdued. It is to be remembered, however, that where there is an inflammation going forward, and where a great deal of blood is taken away, not very uncommonly miscarriages and floodings occur; nor is it to be forgotten, that during the abstraction of the placenta and the membranes, further and large quantities of blood may be discharged from the uterus, which, with the previous venesection, may sink the patient, at least, unless transfusion be interposed. Three cases of inflammation in the end of pregnancy I have had occasion to see; two of those cases did very well, and in the third, in which the inflammation supervened but a short time before delivery, the inflammatory action was completely subdued, but in a few days afterwards parturition commenced, a good deal of blood was lost, and ultimately, as my informant tells me, the lady sunk.

You will sometimes find, what I have seen myself, an inflammation concurrent with parturition; perhaps inflammation begins with delivery, or it may supervene after the process is begun. When delivery is coming on, and there is inflammation in the abdomen, if you do not perceive that the abdomi-

nal inflammation is aggravated by the labour, meddlesome midwifery being bad, I would not have you to interfere. On the other hand, however, if it is clearly obvious that the labour is hurrying the inflammatory action, then the more promptly delivery is terminated the better. If the head is within the reach of instruments, you may endeavour to accelerate the delivery by the use of the lever or the forceps, or, in some rarer cases, by the perforator; or, if the head is above the brim, then that undesirable operation of turning must be adopted, and by it the fœtus may be brought away.

It may not be amiss to note here what I think I stated before, I mean, that where women have spasmodic and inflammatory pains, about the lower part of the abdomen more especially, they are mistaken sometimes for the pains of parturition. That they are not the pains of parturition, we know by their seat, by the tenderness of the parts, by their wanting the ordinary regularity of return; that they are the pains of parturition may be safely inferred, when we find, on examination, that the os uteri is becoming more and more dilated, that during the pain the membranes are tense, and lax during the absence of pain; or, that the head bears down on the tips of the fingers during pain, and recedes during the absence of pain. And by these characteristics it is that I myself, in general, judge.

Of Delivery, or latter Pregnancy, in conjunction with Fever.

In the end of pregnancy, or during delivery, it sometimes happens that fevers supervene; and, on this variety of disease, it may be now proper to add a few remarks. When fever occurs in the end of pregnancy, if the attack be severe, it is not improbable that the expulsion of the child may take place; and for this accident, therefore, you ought to be prepared. So long, however, as there are no peculiar obstetric symptoms occurring, so long it is unnecessary you should interfere; and even if the delivery should supervene, I think the process ought to be conducted on the general principles of midwifery. I need scarcely repeat what I have so often asserted, I mean, that a meddlesome midwifery is bad, and this being admitted, it follows that, in these cases of fever, the mere concurrence of the disease with the end of gestation, is, in itself, no valid argument why you should interpose. Should there be a concurrence of any other urgent symptom, which delivery alone can relieve, then assist if you please, provided you can assist with safety; but, remember, that fever alone will not justify your interference.

If fever concur with *parturition*, in the general, I believe, the labour will proceed well enough, though it may frequently linger, the pains not being so frequent and powerful. If floodings supervene, or other dangerous symptoms, you may then assist artificially, helping with your instruments, the lever, forceps, or perforator, or turning the fœtus, according to the circumstances of the case; but if, on the other hand, the labour lingers, and no symptom of danger concur, then, agreeably to the doctrine already laid down, you had better trust to the natural efforts, of which you are never hastily to despair. If the fever be *infectious*, and it becomes necessary to turn the child, some precaution becomes necessary. A friend of mine being engaged in turning a child, in a case where the mother laboured under fever of the typhoid kind; he to all appearance caught the disease from his patient, and it had very nearly cost him his life. If a woman is labouring under the measles, for instance, or the scarlet fever, and you have not been secured by a previous attack, it becomes necessary that you be upon your guard; I think you would be doing but justice to yourselves and your friends, were you to send for a practitioner who has had those affections already, because, if it can be avoided, valuable lives ought not to be exposed; if, however, it become your duty to act, of course you must, at all risks, never retreating from your post; fall we all must sooner or later, nor can we fall better than in the ranks. In cases of this kind, however, it may be proper to have the patient lifted on to another bed; or, if this cannot be done, in order to keep down the steaming vapour, it may not be amiss to raise the patient a little, and to spread out two or three blankets beneath her, before you begin your operations. The prognosis, in these cases, is not favourable.

Extra-Uterine Pregnancy.

In general, when women conceive, the ovum takes place, as it ought to do, in the uterine cavity, but sometimes it lodges in the peritoneal sac, and far more frequently in the fallopian tube, or the ovary; and this it is that constitutes the *extra-uterine gestation*, divided into *three* varieties, the *tubal*, the *ovarium*, and the *ventral*, according to the situation of the ovum. To these three varieties may be added a fourth first shown me by Dr. Ramsbotham, the younger, the utero-tubular, as it may be called, in which the fœtus lodges in the uterine portion of the tube.

I have myself seen a fœtus, on the whole not imperfectly formed, about the size of six or seven months, and which was taken from the body of a boy where it lay in a sack, in communication with the child's

duodenum, the boy being pregnant. It being, therefore, not impossible for a fœtus to form within the body of a male, in such a situation too, I cannot accede to the opinion advanced by some, namely, that it is impossible that a fœtus should form in women within the peritoneal sac among the abdominal visceræ. The probability is, that this accident is possible, but that it is of very rare occurrence; and I think with Dr. Merriman, that it is not impossible that some of those cases that have been looked upon as ventral pregnancy, have, in reality, been cases of rupture, the case having been mistaken for ventral pregnancy, in consequence of the discovery of the ovum after death among the abdominal viscera, the rent in the womb being overlooked.

The ventral pregnancy being rare, of its symptoms I personally know nothing; but it is said that, in those cases, the placenta and fœtus form, in the ordinary way, the blood-vessels of the maternal viscera, enlarging wherever the placenta chances to adhere. Again:—

When patients die, the victims of ovarian pregnancy, a disease which is far more common, we sometimes find a great deal of blood effused among the viscera, with a fœtus, perhaps, not bigger than the thumb, and an ovary laid open by laceration. More generally, however, in these cases, the ovary becomes as large as the uterus, at the seventh, eighth, or ninth month of pregnancy, when it is found to contain a full-sized fœtus, with a placenta often remarkable for its tenuity, or (as observed hereafter) this fœtus becomes putrid, and is contained in a sort of abscess, where its softer parts gradually disappear, or, in the course of years, it is transmuted into fat or bone.

When tubular pregnancy has been the cause of death, it rarely happens that the fallopian tube becomes as large as in the ovarian pregnancy. I have never seen any case of tubular pregnancy, in which the tube was of great size; more generally this canal enlarges to about the size of a small fist, sometimes to the size of a pullet's egg only, and, in the early part of gestation, say in the second or third month, this cyst bursting open, the child escapes into the peritoneal sac, and the woman suddenly perishes by an internal hæmorrhagy. Many women, I have little doubt, die in this way, but being buried without examination, the real cause of their death is never ascertained. Three or four tubal gestations of this kind have taken place within the circle of my own obstetric acquaintance, whence I infer, that the case is by no means rare.

In extra-uterine pregnancy, the state of the womb varies somewhat, but it is remarkable that it generally becomes two or three times as large as in its virgin condition. In some cases the tunica decidua is found to form in its cavity, much in the same way as if the fœtus were there; this, however, is by no means constant. Mr. Langstaff, who has paid so much attention to morbid anatomy, examined a case in which there was no well-formed tunica decidua, and I have myself seen two tubal cases, in which the decidua was wanting; while, in a third case which I saw, where the patient died between the second and third month, the tunica decidua being very distinctly produced in the uterus.

When extra-uterine pregnancy occurs, whether of the ovarian, tubular, or perhaps of the ventral kind, the symptoms by which it is marked are not always very intelligible in the earlier months, whence it is not improbable, should you meet with a case of this kind, that you may not recognise it till after the decease of the patient. In the early months of extra-uterine gestation, the woman believes herself to be pregnant, for she observes all the ordinary signs; but in ventral pregnancy, according to Burns, there is more irritation than usual in the alimentary tube. In ovarian pregnancy, too, and more certainly in the tubal, in connexion with this pregnancy in the earlier months, there is a great deal of anomalous tenderness and pain and spasm, which is referred to one or other side of the abdomen, its lower part more especially; and after these symptoms have continued for some time, suddenly perhaps, the patient is seized with a fit of collapse, under which she sinks, and this, perhaps, not always in consequence of abdominal hæmorrhagy.

Gestation advancing to the latter months, as in the ovarian pregnancy more especially, the case may still remain obscure; the patient believes herself to be pregnant, but perhaps she exceeds the ordinary term of gestation, proceeding, perhaps, for ten, twelve, or fourteen months, before any very conspicuous changes occur. After the full term of gestation is passed away, however, it may be she is seized, sometimes earlier and sometimes later, with pains very like the pains of parturition, so that she fancies herself in labour; under these pains, in some cases very slight, and in others very severe, there comes away a little blood, and if the tunica decidua is formed, it is expelled also, but of course no part of the fœtus, this not being contained within the uterine cavity. If, then, the practitioner examines carefully at this time, he finds that the tunica decidua is expelled alone, and, inserting a finger or two into the uterus, easily searched in this manner, he finds it enlarged and opened a little, but without the vestige of a child there. These abortive attempts at parturition usually, I believe, cease in a few weeks; but in some cases, and in one of *analogous* kind which I myself saw, the

patient may suffer in this way for years. The woman to whom I allude, a native of Aberdeen, was anxious to have a sort of Cæsarian operation performed, that she might either get rid of her pains or her life, and she came to London for that purpose, the surgeons of Aberdeen (as she said) having refused, and very properly refused, to perform the operation under the circumstances in which she was placed. Her sufferings had been protracted, and dreadful indeed, so much so, that she had taken a razor, and had attempted to perform the operation herself, and she showed me the scar.

Again: before the parturient efforts occur, or after these symptoms are gradually worn away, the patient is liable to be attacked with an inflammation in the cyst, where the fœtus is; this giving rise to tenderness, pains, and stabbings, to adhesions, suppurations, and absorptions; and under these operations the cyst opens on the abdominal surface, or less desirably into the vagina or rectum, and, morsel by morsel, the fœtus may be expelled. In other cases, instead of terminating in this manner, the extra-uterine pregnancy is brought to its close in a way very different; nor is this the least interesting. In this termination of the disease the ovum lies inert within the abdomen for ten, twenty, and thirty years, or longer; and during this time, as observed before, it becomes gradually changed into a bony, or sebaceous, substance, occasioning the patient little further inconvenience than that which arises from its bulk and weight. In this state of the genitals another impregnation may, I believe, occur.

I have considered these extra-uterine cases in a mere cursory manner, as, in the present state of our knowledge, they are rather matters of curiosity than the subjects of much active treatment. If, in the earlier months, the woman have spasmodic or inflammatory pains, you must treat them on general principles. I have nothing peculiar to recommend for them; they are, however, both severe and dangerous. If you suspect an extra-uterine pregnancy, you ought to mention to the friends the chance of sudden death from internal bleedings; and should that occur, this previous intimation to the friends may, with reason, tend to preserve their confidence in your skill and knowledge. If in the end of gestation a great deal of parturient effort occur, and the wound be found to contain nothing but the tunica decidua, and the abdomen is as large as in a pregnancy of nine months, and the woman have exhibited previously all the indications of pregnancy, there can be little, if any, doubt respecting the nature of the case, and anodynes and opium ought to be administered. In such cases, too, it might come to be a consideration, whether a sort of Cæsarian operation ought to be performed, or, at least, whether an opening should be made into the abdomen to take out the child. On the whole, however, considering the danger of the incisions and the risk of a fatal bleeding internally, when the extra-uterine placenta is taken away, abdominal incision seems to promise but very little success, and, therefore, I should be averse to try it. If the fœtus, piece by piece, is coming away from the abdomen, the best office which you can render the patient is, nothing forbidding, to enlarge the opening, and to take out any parts you can without violence. Sometimes the discharge of the fœtus occupies many months, or some years, and during all that time the patient is kept in a state of cachexia, though, in some cases, I believe, she is relieved in a few months. Now if, by dilating prudently if the orifice of the cyst, and removing the bones with forceps, or otherwise, you can accelerate the evacuation and shorten this period, you may render the patient a very effectual service.

After what I have observed respecting the history and treatment of this disease, it is not necessary that I should say much apart respecting the characteristics of it, for these have been involved, in good measure, in the statement I have already made. In the earlier months of extra-uterine pregnancy, say in the first, second, third, fourth, or fifth, I have observed already that the characters are so obscure, that it may not be very easily recognised; but if the woman, after all the signs of pregnancy, be seized with severe, but anomalous pains and spasms of the abdomen, together with fits of fainting and collapse, you may always suspect a tubal pregnancy more especially; and sudden death, in the earlier months, is in a high degree probable. When the full pains of parturition come on about the ninth or tenth month, then there is a fair cause for suspecting that the pregnancy is extra-uterine. The woman, up to this moment, has believed herself to be pregnant in the ordinary way, and now she supposes herself to be in labour: if you at once examine the abdomen, you find it much of the usual form, its enlargement, however, tending laterally; but if you empty the bladder, and make a careful examination through the abdominal coverings, you may, at least, sometimes, distinctly feel the fundus of the uterus, just above the symphysis pubis, large as after recent delivery; and if you can do this, why then there is a good proof that the fœtus is not there; moreover, if you can slide one or two fingers along the neck of the womb, after the decidua comes away, and if you thus insert your fingers into the uterus, you may thus clearly ascertain the absence of the fœtus; so that,

by examining the uterus after the expulsion of the tunica decidua, by feeling the fundus of the uterus above the symphysis pubis, and by finding that the woman has all the pains of delivery, you obtain pretty decisive characteristics that the pregnancy is extra-uterine. Of course, if inflammation and suppuration form, and you have a discharge of the fœtus piece by piece, there can be no doubt of the case. The only difficulty of detecting it will be while the inflammation is going on, and before the discharge of the fœtus; a difficulty of less importance, because, while the inflammation is proceeding, it must be treated on general medical principles.

I shall now close my observations by showing you some preparations. Here is a tubal pregnancy: from the size of the child it would appear to have been about three months old: of the age I judge from observing its bulk. You will perceive, in this extra-uterine pregnancy, that there has been an enlargement of the uterus, and the mouth is so capacious, that you may readily insert two or three fingers into its body. There is no tunica decidua here.

Here is another preparation, very lately enclosed in the glass. You see, as before, that the fœtus is about the size of three months; it rarely exceeds this size in the tubal pregnancy. The woman died from internal bleeding; an ordinary termination of this case. The uterus is enlarged, and the fœtus lies below the fallopian tube.

If the woman survive, the fœtus may come away after months or years, piece by piece; and here are bones which were discharged from the rectum—the tibia, fibula, and bones of the cranium, and so on. I should think, from observing the size of the parietal bones here, that the child must have been of 7 or 8 months old, and that it was an ovarian pregnancy.

I here, also, show you some plates, for which we are indebted to Bœhmer, illustrating the escape of the ovum, when the pregnancy is extra-uterine.

Dr. Blundell showed the plates.

LECTURES ON ANIMAL CHEMISTRY,

BY

PROFESSOR BRANDE.

Delivered at the Royal Institution of Great Britain.

Lecture LII.

Gentlemen,—We may now go on to the examination of some other proximate principles of animals, and there is one very important proximate principle to which we have not yet adverted, namely, *gelatin*, or *jelly*, which exists in various forms, and is derived from various sources; but I may state, that the true skin of animals is composed chiefly of this substance. Accordingly, if you take a portion of the skin of an animal and boil it, you will find that it furnishes, upon evaporation, a quantity of matter, which, as it cools, assumes a tremulous form, which is known under the name of jelly. You may obtain it from a number of other substances, as from *isinglass*, which is the air-bladder, and membranes of a species of sturgeon imported into this country, almost exclusively from Russia; you find it in a variety of animal structures, but chiefly in the true skin. I have stated, that it concretes into a tremulous mass, but it differs from albumen, in being readily dissolved in water, and you may coagulate it and liquefy it any number of times, differing in that respect also from albumen. It is easily soluble in acids and alkalies, but does not form soaps with an alkali, as is the case with albumen. It is prone to decomposition in its liquid state, but when dried, as in isinglass and glue, it is, comparatively speaking, a very permanent substance; it is supposed to be very nutritive, but of that I have some doubt, at least I do not think that it comes any thing near to albumen in nutritive power; but it is found to agree with the system when other kinds of animal food will not.

Another character of jelly is, that it is precipitable by the astringent principle of vegetable infusions, with which it forms an indestructible compound. Here is a mixture of jelly and water, which would soon be decomposed; but if I add an infusion of galls, a precipitate is thrown down; there is a combination of the astringent matter of the galls with the jelly, and you have here the principle of the art of *tanning* developed; because in the skins of animals you have jelly in an organized state, which, when soaked in astringent vegetable infusions, the tan and jelly gradually combine, and you have *leather* produced, which is a very insoluble compound, applicable to a great variety of useful purposes. In the operation of *tanning*, it is necessary that the jelly should be combined with the astringent vegetable matter very gradually. The tanner steeps the skin at first in a weak infusion of bark, until it has acquired a nutmeg brown colour, and then he gradually increases the strength of the steeping liquors, and after a time he draws the skin out, and finds that it is converted into leather. A thick piece of hide requires ten, twelve, or fourteen months, to be converted into good leather, and when you

consider the length of time consumed in the process, and the great capital necessarily employed, you cannot feel surprised that various plans should have been proposed to lessen both. It was proposed to tan with warm instead of cold liquors, and although the tan appeared to promote the skins in a shorter time, the quality of the leather was so much injured, that it was soon given up. Then it was tried to force the tan through the pores of the skin, by employing great pressure; but this was not found to answer. But you may ask why the tanner does not put the skins at once into a strong liquor? The reason is, that the exterior surface of the skin would soon become tanned, and the central part would remain untanned, which, in a short time, would begin to rot and decay, and the leather so treated would soon fall to pieces. The tanner, therefore, judges of the perfection of the tanning by cutting through the leather, and if he finds it of an uniform brown colour, without any white streak in the centre, he considers that the process has been successfully conducted. It would require much time to describe all the operations of the *tan-yard*, but many of them are interesting, as regards the chemical agents employed. I might have mentioned to you, that the mode of preparing the skin for tanning, is first to soak it in lime-water, by which the hair is easily detached; but the cuticle and under part of the skin, the cellular substance, are scraped off after it has been soaked in the lime-water. A great variety of substances have been used for tanning, as the acorn cup of the oriental bark; catechu and sumach have been also used; but the oak bark is most generally used, as furnishing a large quantity of astringent matter. It is not the business of the chemist to describe the different kinds of leather, but I may just mention, that the upper leather of shoes is called *curried* leather, the leather having been tanned, is rubbed over with oil before it is dried, and it is then very flexible, pliable, and durable; but if you take a piece of dry leather, and try to rub it over with oil or grease, you cannot make it enter the pores of the leather; the black colour is produced by rubbing it over with a solution of green vitriol, the sulphate of iron. *Russian* leather is tanned in an infusion of birch bark, and is said to be afterwards mixed with a quantity of birch tar, to give it that odour for which it is peculiar, which renders it valuable for book-binding, on account of preventing it from being attacked by insects. *Tawed* leather, used for gloves, is made by impregnating the skin with a liquor containing alum and salt, and afterwards washed in a mixture of yolks of eggs and water; the saline and animal matters combine, and give it that peculiar softness, and such leather is afterwards coloured as may be required; having been rolled over wooden rollers, in which are grooves, it is called *Morocco* leather. These are the principal varieties of leather employed in this country.

Now, to detect jelly in animal fluids, you have recourse to astringent vegetable liquors, which causes a precipitation of the jelly, in the way you see here; but albuminous fluids are also precipitated by vegetable astringents, and therefore you might be misled. We are indebted to Mr. Edward Davy for the discovery of a valuable test of the presence of jelly, which is the *sulphate of platinum*. Now, when this is dropped into a solution containing jelly, it furnishes an insoluble precipitate, and you have nothing of this kind from albumen, or from the other animal solids, the properties of which have been named. If you have, then, this appearance in conjunction with the others, you may be satisfied that jelly is present. Although jelly exists in great abundance in the body, especially in the membranes, tendons, and ligaments, it has not been discovered in the blood, although it was, at one time, supposed to exist there; so that jelly must be regarded as a product of the blood, not one of its component parts, as albumen.

You are now in possession of the principal natural ingredients of animal bodies, and here I have drawn up a table intended to show the value of different kinds of animal food in albumen, jelly, and water, in their natural state. For example: 100 parts of beef contain 74 parts of water, and the remainder is composed of 20 parts albumen, and 6 of jelly; the term *fibrin* has been used to indicate the compound of albumen and jelly, as it exists in animals. Now, in this table, you see that

100 parts of beef yield 26 of albumen and jelly	
Veal	25
Mutton	29
Pork	24
Chicken	27
Cod	21
Haddock	18
Sole	21

So that when you talk of eating a pound of beef, you must recollect how large a part of it is water. A countryman, for example, would easily eat a pound of bacon, and you will find that he has consumed in that pound a large quantity of animal matter, because it has been previously dried. And when you take hung beef and ham, and other things used as *bonnes bouches*, you, accordingly, are consuming a large quantity of nutriment.

Fat.—Fat has been supposed to be a highly-nutritive substance, but that is not

the case; nor can it be put in competition with albumen and jelly; and it seems a matter of doubt, whether fat is absolutely digested in any quantity, and whether a large proportion of it does not pass off undigested. Now I have little to say on the subject of fat, since the vegetable oils have been already described to you, and as animals' oils agree with them in most particulars; like the vegetable oils, fat is destitute of nitrogen, and is composed of carbon, hydrogen, and oxygen, in various proportions. Fats are in various states of consistency, being sometimes liquid, as in oils; semi-solid, as in lard, and other soft kinds of fat; indurated, as in suet; and still harder, as in spermaceti. When combined with alkalies, they form soaps; and when these soaps are decomposed, they yield *margaric* or *stearic*, and *oleic* acids, which have been already described. Like the vegetable, the animal fats or oils are made up of two parts *elaine* and *stearine*, the former liquid at common temperature, and the latter solid; the combination of the two forms the fat; and, in those fats which are the hardest, of course you have the largest proportion of stearine.

Spermaceti, the produce of a species of whale, is a crystallised fatty matter, and when boiled in alcohol, and cleaned, it assumes a beautiful flaky appearance, combines with the alkalies in that state, and forms soap. Chevreul, who has examined these bodies with great attention, has found that, in its concrete state, spermaceti affords a peculiar acid, which he has called the *cetic*, capable of uniting with potash and other bases.

Ambergris appears to be an intestinal concretion in some species of the whale; it is picked up in masses upon the sea, and valued on account of its odour, and for the property it has of increasing the power of other odours, which it certainly does. It is probably a biliary concretion of the whale, and is sometimes found in large quantities in the intestines of that animal. It is found to contain forty or fifty per cent. of a peculiar fatty matter.

Shell and Bone.—The last set of animal substances, or products, to which I have to call your attention, are those included under the general term shell and bone. Under the head *shell* there are two leading varieties to be considered, speaking as a chemist, the one like earthenware, which is called, therefore, *porcellaneous* shell, composed almost entirely of carbonate of lime, having very little animal matter in it, so that if you steep it in acids, you have very little matter left behind. Most of the univalve shells, such as the limpets, cowries, &c., belong to this class. The other kind of shell is known under the name of mother-of-pearl shell, and when dipped in acid, instead of being dissolved in it, like the porcellaneous shell, you have a membraneous texture remaining, which is neither more nor less than albumen. If you dry it, it looks like horn; but you find that the acid, in taking up the earthy matter, takes up a portion of jelly also, so that the only difference between the porcellaneous and mother-of-pearl shell is, that the one consists of jelly and carbonate of lime, and the other of jelly, albumen, and carbonate of lime, and to the variety in the proportions which these materials exhibit in the different layers, the beautiful variety in the appearance of the shell is owing.

Corals.—The chemical history of corals is interesting, as forming an intermediate link between shell and bone, and they admit of being divided into *four* principal varieties. *First*, such as are composed of carbonate of lime and jelly, as in the common white coral, corresponding nearly in composition with the porcellaneous shell. The *second* variety is composed of carbonate of lime and cartilage, or albumen, and there is a large number of corals of that kind; but there is one very curious one, the *madrepora ramea*, in which you have carbonate of lime united with cartilaginous, or albuminous matter, so as to form joints, by which a considerable degree of motion is allowed. The *third* variety consists of carbonate and phosphate of lime and albumen; of this kind is the *gorgonia nobilis*, or red coral, so celebrated for its beauty. In its composition it approximates to the bones of the higher order of animals. There is a *fourth* variety, the *sponges*, which consist of little else than albuminous matter, for if you burn them you find that they leave little else than animal matter. The history of these substances is very curious and interesting, especially for the manner in which they are accumulated by the small animals which form them; but the manner of doing this has never been satisfactorily accounted for. If our time permitted, we might point out a number of curious facts respecting shells and bones, but they belong rather to the naturalist than to the chemist. Here is the shell of the *cuttlefish*, in which we have a number of beautiful layers of carbonate of lime between layers of animal matter; and if you steep it in weak acids, and gradually increase their strength, you will separate the earthy from the animal matter, and leave the layers of the latter like the leaves of a book. In some of this species, however, phosphate of lime begins to make its appearance.

Bone.—Now, in bone, phosphate of lime is a principal elementary ingredient; but there

is, combined with the phosphate, a quantity of the carbonate of lime, and a minute quantity of phosphate of magnesia. The composition of bone is easily arrived at; if you burn it, you destroy the animal matter and leave the earthy, and we have already adverted to the composition of this ash, when speaking of the phosphate of lime. If you steep a bone in acid you will take up all the earthy matter and jelly, and you will find that a quantity of fat separates, which is, apparently, an ingredient of the bone itself, and that there is another substance in it which, when dried, has the appearance of horn; this is albumen. You have, therefore, albumen, jelly, and fat, in the animal portion, and phosphate and carbonate of lime, phosphate and carbonate of magnesia, and minute portions of other salts, constituting the earthy portion of bone. Bone is of considerable importance in the arts; by boiling, it furnishes a considerable quantity of nutritious matter, and dogs, as you know, have the power of extracting this nutritious matter from the bones on which they feed, by digestion, and of voiding the earthy parts, which, in ridicule, was called by some of the old philosophers, *album græcum*. From the burning of bones a black powder is procured, called *ivory black*, which is applied to a great many useful purposes, but is chiefly consumed in the manufacture of blacking. The clippings of bones furnish, by boiling, jelly, glue, and so on.

Enamel.—There is a variety of bones met with in the teeth of animals, which it may be worth while to remark on; and you find that the teeth of animals are mixtures, as it were, of two kinds of bone, and sometimes of three. In the human teeth there are only two kinds; you have there a plug of bone, surrounded with enamel, but when the enamel is steeped in an acid, instead of leaving a cartilaginous substance, it is wholly dissolved, the enamel being composed of phosphate of lime and jelly, and therefore resembles, in its composition, the porcellaneous shell. In the teeth of carnivorous animals the enamel is generally external; but in graminivorous animals it is generally internal, and beautifully arranged in layers, and the surface becomes grooved, in consequence of the friction taking away the softer parts and leaving the harder, so that by attrition the teeth are gradually converted into saws and rasps. When you steep the tooth of a carnivorous animal in acid, it leaves nothing behind but the cartilaginous skeleton of its bony part. In the tooth of the elephant is a part called the *pars petrosa*, or petrous portion, which appears to hold a middle place between enamel and common bone.

Now, what remains of our time, we may devote to the examination of some of the animal functions, a subject on which chemistry has thrown but little light. Chemists, for the last three hundred years, have written upon digestion, respiration, animal heat, and so on, but they have taught us little, and that little is by no means free from doubt.

Physicians have sometimes entered into long disquisitions to prove the necessity of food for animals, but we shall take that for granted. When food is taken into the mouth of the larger animals, it is torn to pieces by the teeth, and largely mixed with saliva; I am now speaking of the human subject, and, during mastication, the saliva is poured out in considerable quantity, as may be easily seen from what happens when a hungry man smells his dinner; the salivary glands pour out a fluid in such quantities, that his mouth is said to water, and this saliva is blended with food taken into the stomach, and then the food is converted into a pultaceous mass called *chyme*. It is there acted upon by the *gastric* juice, as it is called, of the nature of which we know nothing; it has been analysed, and found to contain mucus and common salt, and so forth; but why it is that the gastric juice coagulates and dissolves albuminous substances, and so acts upon the food to produce chyme, is a question upon which chemistry has thrown no light. By the time it has reached the pyloric extremity of the stomach, it is fit to be mixed with the bile, which is found in the duodenum, and during its passage through the small intestines it is separated into two parts, the one excrementitious, and the other a milky fluid called *chyle*, which is taken up by a set of vessels called the lacteals, which are gifted with the miraculous power of taking up only the nutritious part of the food. It would appear also, that the alkaline and watery portions of the bile are taken up by the lacteals, and that the resinous parts pass through the intestines to stimulate them to action. The chyle is found to be a milky sort of fluid, more or less opaque, depending upon the quantity of albumen which it may contain, and it has the peculiar property of separating into a clot or crassamentum, and a fluid part; and this clot is more like the clot of milk than of blood, although it may be regarded as perfect, as far as its conversion into blood is concerned, the colouring matter being formed during the circulation. The chyle may be detected in the large veins leading to the heart, in white streams, but in the passage of the blood through the lungs it acquires a red colour.

Respiration.—The cause of this change of colour of the blood in the lungs, has been differently accounted for; but it appears to me that the dark colour of the venous blood

depends upon the presence of carbon, which, in its passage through the lungs, is thrown out in the form of carbonic acid, and that the red particles of the blood being no longer obscured by the black or carbonaceous matter, again resume their red appearance. Chemists have continued to institute a great number of experiments on the subject of respiration, but their results have been very discordant, and no wonder, when you consider the difficulty in which the subject is enveloped. First, it is not easy to determine the number of respirations made in a given time; secondly, the quantity of air taken in at each inspiration is difficult to determine, because the very nature of the experiment puts the animals in pain, and therefore excites unusual actions; but we will suppose that, under ordinary circumstances, a healthy man makes about twenty respirations in a minute, and that at each inspiration he inhales about fifteen cubic inches of air. The question has been asked, does the air suffer any change of bulk during the process of respiration? Some have said that it does, and that about ten per cent. of the inspired air disappear; but Messrs. Allen and Pepys have stated, that the quantity thrown out is exactly equal to that taken in; so that it is very difficult to arrive at any certainty. They suppose that the quantity of oxygen which disappears during the passage of the air through the lungs, is compensated for by the quantity of carbonic acid which is liberated during expiration. If this be the case, from what has been already said of the nature of carbonic acid, it would appear pretty clearly, that the only effect of respiration is to bring oxygen into contact with the bulk of carbon of the blood, to form carbonic acid; so that no air disappears, or is absorbed during its passage through the lungs, and that is the opinion of chemists generally. The air expired contains about 3½ per cent. of carbonic acid, but the amount varies very much; for if you examine the air expired a short time after a full meal, you will find about twice the quantity of carbonic acid that there is at other times, when the stomach is empty. There is also a quantity of aqueous vapour given out from the lungs, but that is not essentially connected with the process of respiration. The great end of respiration is to fit the blood for the support of all the functions of life; and it is a curious physiological fact, that if you deprive the blood of its oxygen, the secretions become altered, and many of the functions, especially those of the brain, entirely suspended; so that oxygenised blood is necessary for the support of life. The blood undergoes great changes in its passage through different viscera; it throws off urine in the kidneys, and you are aware how great the change must be which the blood undergoes in the liver, skin, and glandular system. It is a curious physiological fact, that no animal appears capable of existing long without oxygen, or, in other words, without throwing off carbon from the system in the shape of carbonic acid; and that the greatest part of the large quantities of carbon taken in with our food, is thrown off by respiration.

Temperature of Animals.—All the higher order of animals preserve a very uniform temperature under great external changes; and it is found that whatever may be the temperature of the air, that of the body will be about 98° or 100°, or thereabouts. You may ask what is the source of animal heat? and that is a question not so easily answered. It was supposed that the capacity of carbonic acid for heat was less than the capacity of oxygen; and therefore that, when the blood was deprived of carbonic acid by respiration, its capacity for heat was increased; this was the theory of Dr. Crawford, but of late it has received a death-blow, more especially from the experiments of Mr. Brodie. He decapitated an animal, and he found that he could keep up respiration by artificial means; that the heart would go on beating; that the change of the blood from venous to arterial was perfect, and that there was a due abstraction of carbonic acid as before, but the temperature of the animal gradually cooled down to the temperature of the atmosphere, and then the heart ceased to act. So that you see the preservation of animal heat appears to depend on the influence of the nervous system on respiration; but if you should ask me why? I cannot tell; I might assume a style of importance, and say that it was owing to electrical or magnatical influence since we now refer to that to explain every thing. Such is the uncertain state of physiological discoveries, connected with this subject, that we know nothing of the absolute cause of the preservation of the temperature of animals, and it will, probably, continue to remain among those arcana of nature, which, perhaps for the wisest purposes, are hidden from the ingenuity of man.

[This Lecture concludes the course.]

A NEW METHOD OF TREATING BURNS AND SCALDS.

By MICHAEL WARD, M.D., *Manchester.*

HAVING been formerly one of the surgeons of the Manchester Infirmary, Dispensary, &c. (from September, 1790 to January 1805,) it was frequently my lot to meet with cases of extensive burns and

scalds, which, when severe, I had generally the mortification to see prove fatal, without being able, with very few exceptions, even to mitigate, much less remove, the excruciating torments with which these melancholy accidents are attended. The method of treatment then in use was to apply liquor calcis & oleum lini, p. æ. to the burnt or scalded parts, for some time at first; followed by a variety of ointments or salves, either with or without the carbonate of lead or prepared calamine, according to the views of the practitioner. How extremely inadequate to fulfil the indications of rational practice these must have been, it were needless to show.

Finding my efforts to afford relief in cases so pitiable, and of such frequent occurrence, were almost always defeated, the subject often occupied my mind, in order to discover an application of some kind or other, calculated, if not to cure, (which in the worst cases it would be unreasonable to expect,) at all events to relieve the pain, by allaying the irritation, and thus, if possible, arrest the progress of the inflammation and consequent vesication and ulceration, the invariable attendants of severe burns and scalds; and which might also have the advantage of being procured, and applied without loss of time, (circumstances which are of the utmost importance, on account of the rapid progress which the inflammation thus excited constantly makes;) by any person of mature age who might happen to be present at the time of the accident. These appeared to me great and necessary desiderata; but little did I imagine that any external application, possessing most, much less all these good qualities, could be found to reside in one simple substance, and that always at hand, cheap, (no trifling consideration where the quantity required in bad cases must of necessity be large,) admitting also of being applied with the greatest practicable facility. Yet such, I am happy to say, has been the result. See Part 1, in "THE LANCET," of May 10, 1828; to which will now be added, (in accordance with the pledge there given,) a brief narrative of the cases.

The first happened about nine months ago, when my attention was aroused by the screams of some one who seemed to be in pain. On proceeding to the kitchen, I found the mistress busily employed in rubbing the maid's arm, (which was scalded from the elbow to the fingers' ends), with *goose grease*, which she intended to cover with *a poultice* of *scraped potatoes*.* My first object was to remove the goose grease, which was effected by applying soft linen cloths, in such a way as, by gentle pressure, to absorb it from the arm and hand; the patient shivering as if she had been in the cold stage of an intermittent. I then procured a flour drudger, (which happened fortunately to be full,) and sprinkled the scalded parts as completely and expeditiously as I could, and had scarcely begun this operation, when the cries of the patient ceased, her countenance and actions, which were before expressive of agony and torture, assumed a contrary aspect, and, like her expressions, conveyed no ideas but those of gratitude and pleasure. "Oh! how cool and comfortable it is," "I have no pain now," "it is quite gone,"—were her own words, which were frequently repeated, (accompanied by corresponding actions) the instant (almost before) the flour could be said to be fairly in contact with the parts affected.

Nor did the pain return till several hours had elapsed, then only slightly, and was speedily removed by repeating the use of the flour drudger; which was continued at first three times, and afterwards twice a day, for three days, when scarcely any appearance of the accident remained, and the patient returned to her usual business.

CASES 2 & 3.—The second and third cases in which I had recourse to flour as a remedy for burns and scalds, happened five or six months ago to the same individual, A brief sketch will suffice.

Mrs. —— scalded the top of her foot and instep. The effects extended the size of a hand, and were more severe from the difficulty experienced in removing the stocking; the most central part having sustained the greatest injury. With all speed flour was applied, and repeated at proper intervals, with the effect of immediately banishing all pain and uneasiness from the scalded parts, *which it had no sooner touched then she pronounced it "to be worth a guinea a grain."* Except in the centre of the scalded part, where an ulcer was formed, (which was treated as described in "THE LANCET," p. 176. vol. 11, 1827-8.) very little appearance of the accident remained after the first few days. Before the ulcer was healed she had the misfortune to burn her hand by exposing it to the action of wax and oil of turpentine in a state of ignition. In this case also the application of flour produced immediate relief, and was the only remedy required, prepared calamine excepted.

* Not only goose grease and scraped potatoes, but even vinegar, and cloths dipped in cold water, extraordinary as it must appear, have their advocates; than which nothing can be imagined more irrational and absurd. It is to be hoped, however, that the profession will at length be rescued from the charge of empiricism on the one hand, or inadequacy in the means employed to fulfil the ends proposed, on the other.

The train of reasoning which led to the experiments, appears to me as plain as the inferences, to be drawn from the latter, are unavoidable.

To attempt to prove that the methods of treatment commonly resorted to are quite inadequate to produce the desired effect, would, I conceive, be superfluous. They are, in fact, and have long been, a disgrace to the profession, and must, at all events, be superseded by others of a more rational description. If this be admitted, very little more, I conceive, need be added to what has been already said in favour of the mode of treatment now recommended. Indeed, it is only recently that the idea of applying flour by means of the drudger occurred to me. Long ago, in reflecting upon the subject, I had reasoned myself into the belief of its efficacy, accompanied by a determination to try the experiment on the first occasion that might offer.

So far I had proceeded in Part 2, (which has been unavoidably delayed,) when I was agreeably surprised by a letter from Mr. Tatham, Surgeon, at Kendal, (a gentleman who was previously unknown to me,) of which the following is a copy. To me it appears to do equal credit to the head and heart of the writer, demonstrating, as it does, his wish to diffuse generally, what he considers valuable information, upon a subject of great and general importance, arising from the opportunity he has had of putting to the test, "*with the happiest consequences*," the plan of treatment recommended in "THE LANCET" of May 10, 1828, p. 175, &c.

The remaining observations which I intended to make, I will, with your leave, defer at present,—only adding, that the delay from the 19th of July (when the letter is dated) to the 31st, was accidental.

Yours respectfully,

MICHAEL WARD, M.D.

Manchester, July 31, 1828.

"Kendal, July 19, 1828.

"SIR,—The following case being illustrative of the excellence of your plan of treating burns and scalds, I have sent it to you by an eminent physician of your acquaintance,* to dispose of in any way you choose.

On Friday morning, July 11th, I was hastily sent for to attend a fine boy, aged 5, who had just met with a most violent scald, from receiving upon his face and neck the contents of a small pan of boiling water, which had blistered the skin to a considerable degree. On entering the apartment, I witnessed great distress on the part of the attendants, owing to the piercing cries of the sufferer, who complained of burning pain, and the uneasiness created by the application of cold cloths, which greatly irritated the tender parts by his perpetual restless condition and desire to be moved. Finding that the greatest difficulty would arise from his resistance to the application of the cloths, or any thing that would require frequent change, I determined to make trial of the plan of covering the affected parts with flour, as stated a short time ago in "THE LANCET;" therefore immediately requested to have the drudger brought up from the kitchen, that I might cover the whole of the scald with flour, which I did to the almost instantaneous relief of the sufferer, and the great gratification of his mother and relations, who seemed rather astonished with the simplicity of the remedy, and its happy effects. I was soon enabled to leave the house, after directing that the drudger should be copiously used whenever there was any exposure of the injured parts, and that a little of an anodyne, composed of laudanum and tr. hyosciami, should be given, though there appeared no absolute necessity for such medicine. At my next visit, a little before noon, every thing wore a comfortable aspect—the flour covering the face and neck, the boy perfectly quiet, expressing himself as very easy whenever spoken to concerning his condition. In the evening, there was nothing untoward; a little swelling about the mouth and nates was to be noticed, but the whole system was wonderfully composed. I ordered barley water, or tea, for drink, and another dose of the anodyne at night,—likewise that flour should be put upon any part that might appear moist or uncovered. At my visit next morning, I had the gratification of finding the little patient in every respect as well as could be wished, having passed a tolerably easy night, and able to answer questions very comfortably. Pulse nearly natural—tongue moist—breathing free and quiet—swelling about the mouth, &c., rather abated, though still rendering the taking of any thing painful. The inflammation, which, at my first visit, threatened the most unfortunate consequences, had been amazingly kept under; in short, under existing circumstances, nothing could proceed more favourably. As the bowels had not been moved lately, I wished a dose of ol. ricini to be administered, and the diluents to be continued. At night there existed the same composure as before, and freedom from fever or extension of inflammation. *The flour kept the part quite cool*, and had, in many places, formed a compact paste. Some diluents were taken in the course of the day, and as the ol. ricini had produced but a slight effect, it was ordered to be repeated. No anodyne to-night. On Sunday I had the pleasure of still observing

* Dr. Holme, of Manchester.

my patient go on satisfactorily—in a way, indeed, such as I had never seen before in similar cases, where so much pain and distress had commonly rendered attendance truly unpleasant. Here the suffering was, for the most part, trifling; little, nay, almost no re-action had taken place, nor was there what could be deemed one unfavourable symptom. The ol. ricini answered better to-day; I considered any thing further unnecessary, beyond a few drops of tr. hyosciami now and then, for the purpose of allaying any restlessness that might arise from the stiffness of his face, as well as for keeping his bowels regular. To relate any thing in detail further concerning this case, would only be an useless expenditure of time; it will be sufficient to say that the boy is speedily recovering his wonted spirits and looks, his face and neck becoming free from the flour, which was allowed to come off in flakes, leaving some parts underneath dry and free from excoriation, and others undergoing very slight suppuration, so as to afford hopes of there being in the end but small if any disfiguration, notwithstanding the appalling nature of the accident.

It would have been no easy matter in some houses to have kept the inmates satisfied with a method of cure apparently so simple and homely; but, in this instance, the father and mother of the child being persons of intelligence, there was no difficulty of such a nature; to obviate which it may be needful, occasionally, to have the flour sent in a formal manner. Covering the whole with a cloth, or cloths, is recommended generally for the sake of keeping the air more perfectly excluded, which must be desirable, especially in winter; but in this case it could not be done, owing to the repugnance of the child, *who would allow nothing but flour to be applied*; and it could not fail to strike one that this substance possessed a high power in conducting caloric, whether in powder, or after it had formed that amylaceous paste, which it did in many places. *There was an expression of comfort after each application of the flour.*

It ever must afford satisfaction,

——— "conferre labanti
Rober et afflictis solatia reddere membris," &c.

But when a method in itself so simple, and yet so effectual, can be had recourse to for the purpose, it is but fair to express a sentiment of gratitude towards the person who has had the good fortune to make the discovery, and give it publicity.

I am, Sir, Yours respectfully,
EDWARD TATHAM,
Surgeon."

"Dr. Ward, Manchester."

ON INCURABLE DISTORTIONS OF THE FEET.

To the Editor of THE LANCET.

SIR,—I now send you an account of some cases that were alluded to in my last communication.

I am, Sir,
Your most obedient servant,
T. SHELDRAKE.

No. 73, Great Titchfield Street,
Portland Place.

CASE 1.—In the year 1792, I was desired to meet the late Dr. Alderson at Norwich, in consultation on the case of a young lady. At that time she was about two years old; she was finely formed in every particular, except that her feet and knees were strait, and rigidly confined in the positions that are represented by the annexed figures, which I drew from them at the same time. When looked at, as she sat behind a table, she had all the appearance of good health; but her legs and thighs were under the influence of palsy, and quite void of sensation, as well as rigidly confined in the positions that are represented here. It was imagined by some gentlemen, who had been previously consulted, that this was a case of paralysis, connected with disease in the spine, and it was proposed to subject the patient to the treatment that had been proposed by Mr. Pott for the cure of that disease; but the parents refused to subject the child to that treatment, and it was left to Dr. Alderson and me to ascertain, so far as it might be done, what was the real state of the case, and what could be done to assist the patient.

After the most accurate examination, we agreed that there was no disease, or peculiarity, in the spine, or in any parts of the body that were connected with it; what disease there was, was confined to the thighs, legs, and feet, which were exactly as I have just described them.

Presuming that the disease was palsy, and confined to the situation that has been described, and having seen many cases of paralytic affections in young children, some of which had long existed, and then disappeared suddenly, while others had disappeared after having existed but a short time, it occurred to me, that if this child should, at any future period of her life, get clear of the paralytic affection, either by the effect of medicine, or the effort of nature, she would still have her legs and feet useless, and, from the position she would necessarily keep them in, have them a very great incumbrance to her.

For this reason, I proposed that I should be allowed to reduce her feet to their natural form and position, and take such precautions as would be necessary to keep them in the situation to which they would then be brought; all this I was certain that I could effect; if she, afterwards, recovered the power of using her feet, she would walk without difficulty; if she did not, her situation, sitting with her feet before her in the natural position, would be more comfortable than it would be if she was obliged to keep them in the very inconvenient situation they were in at that time.

I was permitted to do this; in about three months I reduced the feet to their natural form and position; gave them so much flexibility, that, with my hands, I could easily place them, or the knee-joints, in any position that was within the range of their natural action, but they showed no muscular power, or tendency, to remove themselves from the position in which I placed them. I supplied such means as were necessary to keep them in that situation, and then took my leave.

I never saw this patient afterwards, but I lived in familiar intercourse with Dr. Alderson so long as he remained alive, and learned from him, that as he lived upon terms of intimate friendship with the family, he was well acquainted with every thing that related to our patient. From time to time he tried every thing in medicine that suggested itself as being likely to be of service to this lady, but no alteration was ever produced; her health was always good, but her feet remained in the same state that I left them. She was a member of a wealthy family; all her relations exerted themselves to the utmost to procure and give her every enjoyment of which she, in her unfortunate situation, was capable. She was highly educated, and acquired every literary and elegant accomplishment that wealth could procure; she was very highly accomplished in every thing of this kind; and, so long as Dr. Alderson lived, I knew from him that she continued without any alteration in the form or power of her legs; she had become a very beautiful woman, in every other respect, and enjoyed whatever health, wealth, and the most affectionate relations could procure for her. Since Dr. Alderson died, I have been many times in Norwich, and ascertained that this lady was still living in the same state that Dr. Alderson described her to be in; and I have reason to believe that she is still living in the same state; if she is, she has passed thirty years in a state of happiness that she would not have enjoyed had she been subjected to the ill-judged experiments that it was proposed to make upon her in the early part of her life.

Case 2.—In the year 1793, I was consulted about the child of a gentleman in Dublin; he was then about ten years old. About two years before he had a long illness, of which I did not get a clear account; it was said, however, that upon recovering from that illness he did not walk so well as he had done before; he, at the time that I saw him, walked, with some difficulty, upon his toes; this peculiarity was increasing at the time I saw him.

The general appearance of both his legs resembled that of the leg of Capt. Darley's son, as it is represented by the figures at page 270 of The Lancet. When attempting to reduce them to their natural position, I found considerable resistance from the contractile action of the gastrocnemii muscles and tendo-achillis; it required much force to counteract this contraction, and, during the time that I attempted it, he complained of great pain in the whole course of those muscles. There was, likewise, a tendency to keep both the elbows and knees bent, and the fingers on each hand straight, so that he passed from one side of the room to the other holding by chairs, tables, or other pieces of furniture, or by leaning his hands against the walls, when there was no furniture in the direction in which he wished to go.

This appeared to be a proper case to try what could be done by instruments, which should be applied to keep the feet extended, to confine them to their natural positions, with an attendant to lead him about, and thus to ascertain what advantage might be derived from exercise that was so obtained, and regularly kept up. Upon my return to Dublin the following summer, he was worse in every respect; his attendant could not manage his instruments, which, therefore, had been laid aside. Medicine, in every form that could be devised, had been administered by many gentlemen who were consulted, but no benefit was obtained from them. When I attempted to make extension of any of his limbs, as would enable me to bring them into their natural positions, he resisted my attempts with all his strength; when I used so much force as overcame the resistance he made, he seemed to feel great pain, and, upon removing my hands, his feet instantly relapsed into their former state of contraction. When he attempted to move round the room, in the same manner he did when I saw him the preceding summer, he crouched with his seat much nearer to the ground, and all his limbs were very much contracted, so that he could scarcely move at all. *It was evident that I could not render him any service.*

On my return to Dublin, the third year, all the symptoms were greatly aggravated; he was no longer able to move himself from

one situation to another, but remained in one place, till, by his desire, he was removed to another. The contraction and rigidity of all his limbs was very greatly increased, but not so much as prevented me from attempting to extend them, but this attempt required so much exertion and caused so much pain that I did not repeat it; it was evident that the cause of the resistance, whatever it was, was greatly and rapidly increasing.

On my returning to Dublin, the fourth year, I saw this patient, with all his symptoms so much aggravated that he was no longer capable of locomotion, but was removed from his sofa to his bed, as occasion rendered it necessary. From the first time that I saw him he never talked freely, as other children of his age usually do; his ideas seemed to be confused, and there was much irritability in his temper; all these peculiarities had increased in the same proportion as his other symptoms, and the last-mentioned had now greatly increased, and become so violent as to be very troublesome to all that were about him, and he had now the appearance and manner of a passionate ideot.

My last visit to Dublin was in the year 1800, when I was told that he died some years before, with all the symptoms that I had seen him labour under for so long a time, very greatly aggravated, till the time of his final dissolution.

Case 3.—A gentleman, in Dorsetshire, had a son born with his feet distorted, like one of the cases that is described and represented at page 142, &c., of The Lancet, but they were not distorted to so great an extent. He was placed under my care when he was about three months old, and, at the end of four months, his feet were reduced to their natural form so completely that he was removed, to all appearance, perfectly well.

Three years afterwards he returned under my care, as he had, in the intermediate time, relapsed; he had been placed upon his feet, and walked, when I now saw him, very imperfectly upon his toes, something like the feet that are represented in the annexed figures, but were not so much distorted, or so rigid, as the feet were which those figures represent. His knees were a little bent and contracted; he used his hands but imperfectly, and his speech was so imperfect that he was not very intelligible to those who were not always with him, but those who were understood him very well. His health, at this time, was so indifferent, that it was thought necessary for the family to live in the country, that he might have the benefit of the air while I attended him. At this time, peculiarities in his manner began to appear, which rendered much caution necessary in the management of his feet. After an attendance of several months they seemed to be restored to nearly their natural state, and he was again removed.

When he was about nine years old he was brought back a third time; all the symptoms, both mental and corporeal, were now greatly exaggerated, beyond what they had been on my second attendance; his legs were much worse; he was less able to walk, or to make use of his hands; his eyes were fixed, and his speech was less intelligible, although he knew, and would talk, in his own way, to those who were then about him. He was quite reconciled to me; but when I was employed in doing what was necessary to his feet, he watched my proceedings with anxiety; he held my hands with all his strength, but still I was able to out-manœuvre him, till I brought his feet upon the ground, when his resistance ceased, and every thing went on well till I saw him again the next day. In this way I proceeded, and, after a long attendance, I brought him again to walk with his feet flat on the ground, but all the other peculiarities of the case remained in full force. In this condition he returned into the country, and I was afterwards informed that he became worse and worse, and, at the end of several years, he died under circumstances that were very similar to those which took place in the case that was last described.

The late Dr. Rowley desired me to visit a patient who was placed in his house, that his health might be under his care, at the same time that I was employed in curing the defects of his feet.

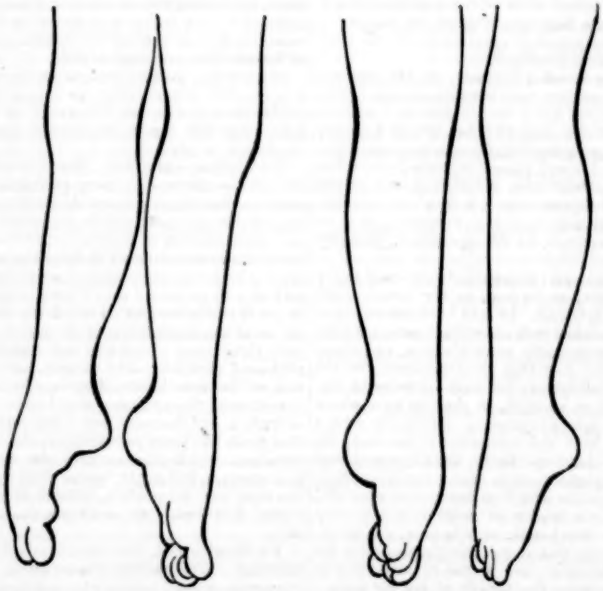
This patient was a boy, about six years old, whose case was in every particular similar to that which was last described, except that he appeared to have less intellect, and more violence in his temper, so that I found it was very difficult to keep him still, while I took the measures that were necessary to prepare what I should have occasion to use in curing his feet. I asked Dr. Rowley what was his opinion of the case? He said, the defects in his feet and legs were such as I should be able to cure, and the rest of the case he would manage himself. I mentioned the two cases that I have just described, and the conjecture I had formed, that there was some peculiarity in the constitution, which affected both the nerves and muscles, and might oppose obstacles to the cure, which it might be difficult to overcome, if it should be at all practicable to do so.

Dr. Rowley said, that in all this I was mistaken. The patient was an artful, ill-tempered, spoiled child, who, having been accustomed to gain whatever he wanted from his mother, by flying into violent pas-

sions, had adopted this practice upon all occasions; but I, said Dr. Rowley, will effectually cure him of it, as he would now show me. Something that I did, in taking my measures, displeased the child; his usual fit of passion came on; the Doctor placed him in a chair, and ordered him to be *quiet instantly*; the child stormed; the Doctor made more noise than the child made, shook him heartily, gave him some slaps on the hands, and he became quiet. That is the way, said Doctor Rowley, that I will bring him to good order. I proceeded to make the preparations that would be necessary for my part of the business, but, ere I had completed them, Doctor Rowley wrote to inform me, that I needed to do nothing more, because the *child was dead*.

This led me to make inquiries upon the subject from the Doctor, who told me, that on the morning when the case finished, something was done that displeased the patient, who became violently enraged, and stormed with more than usual violence; the Doctor stormed with more violence than his patient, who still rose in energy above the Doctor. The rage of the child still increased; the Doctor slapped the patient's hands, the child's violence still increased, *and he suddenly fell dead upon the floor*.

I have seen many other cases of distortion of the legs and feet, which nearly resembled cases that I could easily and certainly cure, but which were connected with circumstances that rendered the cure difficult, uncertain, and even impracticable; therefore, at the same time that I am authorised to say, all the cases that I have seen, where the distortion is *only* produced by the interruption or disuse of muscular action, the powers and the forms of such members may be completely restored by the treatment that I have described; but it must likewise be observed, that cases which, in appearance, resemble these, are often confounded with them; and when this is the case, disappointment must ensue, that will be disagreeable to all the parties that are concerned in them.



THE LANCET.

London, Saturday, August 16, 1828.

THE plan of the Medical Provident Institution of Scotland, which originated with Dr. ALLISON of Edinburgh, embraced a variety of objects, beside that of securing annuities for the widows and children of members of the Medical Profession. It seems to have been the aim of Dr. ALLISON to unite the advantages of a Life and Annuity Assurance Company, a Friendly Society, and a Savings Bank; the funds of each branch of the institution, however, being kept separate, and made applicable only to the particular object which the contributor might seek to secure. In the first of these departments there is this important modification of the ordinary operation of life assurances, that members have the option, at certain ages, of converting their policies into annuities for themselves, or for their widows, or other nominees; an arrangement by which the assured may render the value of their past contributions available during their own lives. The principle of a tontine is also introduced into this department of the institution, with a view of raising endowments for children. The sums deposited for different classes of children of the same age are to accumulate at compound interest, and to be divided among the survivors, when they attain the age of twenty-one; the interest of the accumulated fund of each class to be applied, at certain ages, towards the expences of their education.

That branch of the Institution, of which the principle is, in part, founded on that of the Friendly Societies of the mechanics, has for its object, the payment of sums during professional incapacity from sickness, or other personal disability, in the middle ages of life, to be succeeded by permanent annuities, to commence in old age. Thus a person of the age of 21, by the payment of 48*l.* 17*s.* 3*d.* in one sum, or of 2*l.* 16*s.* 4*d.* till he attains the age of 60 will be entitled to 1*l.* per week during professional incapacity, subject to certain limitations; to a permanent annuity of 26*l.*, to commence at the age of 60; and to the sum of 26*l.* to his heirs, or others, as he may direct, payable within three months after his death. The same benefits may be assured at any other age, by a contribution regulated according to a graduated scale; thus, at the age of 40, the single payment amounts to 103*l.* 0*s.* 6*d.*, and the annual payment till 60, is 8*l.* 7*s.* The Institution also assures deferred annuities, or annuities commencing in old age, unconnected with any benefit during professional incapacity.

The Savings Bank department of Dr. ALLISON's institution would perhaps require, in order to render it available to any beneficial extent, the same species of parliamentary encouragement which is extended to the national Savings Banks. This encouragement would, in all probability, be easily obtained, provided the objects to which the savings are to be applied be sufficiently defined; and the temptation of a higher rate of interest might reconcile some individuals to investing their money in such a fund, who might otherwise feel their dignity somewhat compromised by contributing to it. Considerations of pride or dignity, however, may well be dispensed with, in judging of the expediency of promoting the interests of such an institution as that which has been founded by Dr. ALLISON. The object of such an institution is to do good, and no man need be ashamed of the means by which this object is accomplished. Besides, the proudest among us are not exempt from the vicissitudes of fortune, and may one day lament the bitter consequences of improvidence; but no man ever yet reproached himself with having been too provident.

How far the plan of the Scotch Institution, or, at least, some parts of that plan,

might be successfully adopted in forming a Medical Provident Association in this country, may be matter for future consideration. The part of the scheme, which appears least likely to meet with general support, is that which assures annuities commencing in old age. Few men, in the outset, or, indeed, at almost any period of their professional career, would make any great sacrifice of their capital, or income, for the sake of providing against the possible necessities of their o'd age. Men seldom think of remote calamity; or, if they think of it at all, their self-love prompts them to believe that they will be exempted from it. Machiavelli, by way of illustrating the readiness with which men, for the most part, despise distant danger, has observed, that if a man's passion for a woman, of whom he was violently enamoured, could be gratified only on the condition of his instant and inevitable decapitation, the lady's virtue would be in no danger; but that if the condition annexed to the gratification were the lover's perdition in the world to come, he would not answer for the preservation of her honour. This remark is founded in an accurate, though, in respect to the particular illustration, not a flattering estimate of human nature. To apply it to a case in which the feelings of mankind are less open to censure, we may observe that men generally want a stronger inducement to be provident, than that which is suggested by the dread of any remote evil which may befal themselves. This stronger inducement is supplied by the anxiety which they feel for the future welfare of those who are nearest and dearest to them—their wives and their children. It is that part of Dr. Allison's plan, therefore, which has for its object the assistance of the widows and orphans of medical men, to which the most general support is likely to be given, and which may, we think, be most beneficially adopted, in the event of an association being formed in this country, embracing the interests, not of a particular class of practitioners, or of practitioners residing within certain districts, but of the whole medical profession.

The sentiments of the profession on this subject may, at the present period, be more conveniently collected through the medium of a medical journal, than at a public meeting. We repeat that we shall most cordially render all the assistance in our power towards accomplishing an object in which so large a proportion of the profession are, as husbands and fathers, already interested, and in which we trust the few, who are at present not so interested, may speedily become so.

Poor Dr. James Johnstone has again put forth a voluntary affidavit, sworn before Mr. Alderman Garratt, with a view of proving that the sale of his Fasciculi is undiminished, and he complains bitterly of the pertinacious malevolence with which we have declared his Quarterly Journal to be defunct. This, he says, is so far from being the fact, that he is ready, if need be, to make oath and say, that the thing which he publishes once a fortnight is, to all intents and purposes, a quarterly journal. Truly, we know of nothing to restrain the Doctor, provided he can find an Alderman to listen, and a clerk to take the fee, from making any *ad libitum* number of voluntary affidavits in confirmation of any phantasies to which, in his fits of cerebral congestion, his diseased imagination may give birth. Is the Doctor aware—we presume he is—that a voluntary affidavit, as it is called, that is to say, an affidavit having no reference to a judicial proceeding, gives no additional legal sanction to a man's affirmation, inasmuch as the party who swears is not liable to any punishment, if he makes oath to a lie? Neither is it any moral or religious sanction to a man's credit; on the contrary, the resorting to a nugatory ceremony creates a suspicion of his good faith, as when a Jew swears, as he hopes to be saved, that he loses by

you in taking your bidding for his lemons. It is, we repeat, the last resort of forlorn blacking-venders, brewers of small ale, and expiring empirics; and it serves no purpose, except that of putting the public upon the alert, to reject the thing sworn to as utterly unworthy of credit.

POISONING BY PRUSSIC ACID.

The attention of the public in this country has recently been directed to the subject of poisoning by Prussic Acid, in consequence of the suicide of a condemned felon, by this means; and, in France, at the present moment there is much excitation on the same subject, from the occurrence of a most lamentable catastrophe in one of the public hospitals; no less than SEVEN patients having been poisoned by the incautious use of it.

It may not, therefore, be considered *mal-a-propos* at the present juncture to speak of this most energetic poison, generally.

The prussic, or hydrocyanic acid, is a colourless liquid, having a smell similar to peach blossoms; it has a sharp taste, at first cooling to the tongue, but subsequently hot and irritating. It exists as the poisonous ingredient in a great variety of native combinations in the vegetable kingdom, as in the cherry laurel, (prunus lauro-cerasus) bitter almond (amygdalus communis); the kernels of various fruits; the pips of apples; the leaves, flowers, and kernels of the peach,* &c.—The prussic acid was first obtained from the well-known colouring matter called *Prussian blue*, by Scheele, a German chemist, in 1782, and hence the name *prussic* acid. It was not, however, until the year 1808 that chemists were fully acquainted with its nature. Gay-Lussac, a French chemist, at this period, obtained it in a state of purity, and pointed out the elements of which it is composed. The result of his researches was, that the base of the acid is a compound of azote and carbon, which he denominated *cyanogen*, because it is the principle which generate sblue, or, literally, the blue-maker; and this cyanogen, uniting with hydrogen, constitutes the *hydrocyanic* or prussic acid, the hydrogen being the acidifying principle.

Prussic acid, in its concentrated state, is one the most violent poisons yet known, and its virulence is in proportion to its purity. Magendie states, as the result of his experiments, that a single drop of the prussic acid being conveyed into the throat of a strong dog, the animal fell down dead and stiff, after two or three inspirations. When a rod, dipped into it, is brought in contact with the tongue of an animal, death ensues before the rod can be withdrawn. A particle of the acid, applied to the eye, produces equally sudden death; and if a bird be held a moment over the mouth of a vial, containing the acid, it dies. Scharinger, a professor at Vienna, having prepared a pure and concentrated prussic acid, spread a small quantity on his naked arm, and died very shortly afterwards. Orfila relates the following instance: "M. B., a professor of chemistry, inadvertently left upon his table a flask, containing alcohol impregnated with prussic acid. The servant girl, enticed by the agreeable smell of the liquid, swallowed a small glass of it. At the expiration of two minutes she fell dead, as if she had been struck with apoplexy." Hufeland relates the case of a man who, being apprehended as a thief, swallowed some prussic acid at 2 P. M.; he staggered a few steps, and fell; the pulse could not be felt, and there was no trace of breathing. In a few minutes a single and violent expiration took place; the extremities were cold; the eyes half open and shining, but without any irritability. At night he was stiff.

These instances are sufficient to show that, in its pure state, the prussic acid is a most terrible poison, destroying life with the rapidity of lightning. There is no peculiar set of symptoms which can be considered as characteristic of the administration of this poison; if it does not immediately kill, convulsions generally supervene; but these, we scarcely need say, are the common results of the majority of poisons. Neither are there any distinctive signs revealed on dissection of bodies which have died from the exhibition of prussic acid. In the case related by Hufeland, the pia mater and vessels of the brain were filled with blood; the stomach was highly inflamed, and presented gangrenous spots of the size of a sixpence; the villous coat separated on the slightest pressure of the nails; all the blood was collected in the veins, whilst the arteries were empty, and it was generally of a black blue colour, fluid, yet thick, like oil, and had a most penetrating smell of bitter almonds. M. Robert, in examining a dog, found that the brain was healthy in appearance, but exhaled the odour of prussic acid. The tongue was soft, bluish, and hung out of the mouth; the mucous membrane of the trachea was preternaturally red; the lungs were of a bright red hue, and the heart was filled with very dirty deep red blood; the veins contained very thick and dark-coloured blood. The lungs

* It is well known that the peach leaves are used for the purpose of flavouring the *liqueur*, called NOYEAU; as laurel leaves are also for custards.

and heart, and their contents, exhaled the odour of prussic acid.

Although we have no physical signs in the change of the structure of the body, by which we can recognise the exhibition of the poison in question; yet, by the aid of chemistry, we are enabled to detect even the most minute portion. One ten thousandth part of prussic acid in water, may be discovered by the addition of a few drops of a solution of sulphate of iron. The extreme delicacy of this test is, however, surpassed by another recommended by Lassaigne, in which copper is used, and which will detect $\frac{1}{20000}$ of hydrocyanic acid in water. The liquid containing the acid must be rendered slightly alkaline, with potash; a few drops of a solution of sulphate of copper are then to be added, and afterwards sufficient muriatic acid to re-dissolve the excess of oxide of copper. The liquid will appear more or less milky, according to the quantity of hydrocyanic acid present. It has been recommended, in examining the bodies of those suspected of being destroyed by prussic acid, to collect the blood contained in the ventricles of the heart, a portion of the contents of the stomach and of the duodenum, together with any fluid that may be found in the head, chest, or abdomen; these to be agitated for some time in distilled water, the fluid then to be filtered, and submitted to the chemical tests enumerated. Lassaigne injected into the œsophagus of a cat twelve drops of pure hydrocyanic acid, diluted with sixty drops of distilled water; the animal immediately appeared weak, the respiration became slow, there were slight convulsions of the limbs, and it died *one minute* after the injection of the poison. At the moment of its death a vapour came from the throat smelling strongly of prussic acid; and a paper, moistened with alkali, when held to it, was afterwards rendered blue by persulphate of iron. The stomach was cut into pieces under water, and both the stomach and water were then put into a retort, and subjected to heat; when about an eighth of the liquid was distilled, it was submitted to chemical examination, and by using the copper test, Prussic acid was readily detected.

In respect to the *antidotes* to prussic acid, —strictly speaking, there are none, for when the concentrated acid has been given, it acts with such tremendous rigour, that life is extinct before any succour whatever can be given. If the symptoms have been produced by a dose of the weak acid, or by plants which contain it, it is advisable first to excite vomiting by means of tartar emetic, and then to administer ammonia, brandy, camphorated spirit, or oil of turpentine, separately or conjointly.

The account which has reached us, respecting the death of seven patients by prussic acid, in one of the French hospitals, (Bicêtre), is as follows:—M. Ferrus, one of the physicians, was in the habit of employing prussic acid in cases of epilepsy; and the formula which he used was that of Magendie, under the title of syrup of hydrocyanic acid, consisting of one part of medicinal prussic acid to 128 of syrup. In private practice, the medicine had always been procured at the shop of M. Pelletier, and an ounce was usually prescribed for a dose. M. Ferrus, wishing to try the medicine in the hospital, ordered it in the dose of an ounce to fourteen epilectic patients. The house surgeon represented to M. Ferrus, that drachm doses only were given, and that these occasionally produced unpleasant symptoms. This induced M. Ferrus to prescribe half an ounce, although he had, as before stated, usually directed half an ounce to his patients in private practice. The medicine was procured from the *Pharmacien Centrale des Hopitaux*, where the syrup is prepared according to the *Codex*, or French Pharmacopœia, which is, one part of prussic acid to nine parts of syrup. The Infirmaryman commenced the exhibition on the 14 epileptics; by the time he had given it to the seventh, the first was dead, and the others expired in the course of twenty minutes. Magendie uses the acid prepared according to the formula of Gay-Lussac; he adds six times its volume, or 8.5 times its weight of distilled water, and he then designated it medicinal prussic acid. The acid directed in the French Pharmacopœia, is prepared according to the process of Scheele, which, in the opinion of Magendie, is exceedingly uncertain in its results. The formula of Gay-Lussac, or of Vauquelin, should always be followed. Mr. Garden, of Oxford Street, prepares it according to Vauquelin; it is made at Apothecaries' Hall by Scheele's process.

HARDENING OF STEEL BY A CURRENT OF COMPRESSED AIR.

From the observation of travellers, that the manufacture of Damascus blades was carried on only during the time when north winds occurred, M. Anozoff made experiments on the hardening of steel instruments by putting them, when heated, into a powerful current of air, instead of quenching them in water. From the experiments already made, he expects ultimate success. He finds that, for very sharp-edged instruments, this method is much better than the ordinary one; that the colder the air and the more rapid its stream, the greater is the effect. The effect varies with the thickness of the mass to be hardened. The method succeeds well with case-hardened goods.

INNOCUOUS NATURE OF PUTRID ANIMAL EXHALATIONS.

A committee have been engaged in France in examining the circumstances relative to the knacker's operations. His business consists in killing old worn-out horses, and turning every part of their body to account. The most singular results which the committee have obtained relate to the innocuous nature of the exhalations arising from the putrefying matter; every body examined agreed that they were offensive and disgusting, but no one that they were unwholesome; on the contrary, they appeared to conduce to health. All the men, women, and children concerned in the works of this kind had unvarying health, and were remarkably well in appearance, and strong in body. The workmen commonly attained an old age, and were generally free from the usual infirmities which accompany it. Sixty, seventy, and even eighty, were common ages. Persons who live close to the places, or go there daily, share these advantages with the workmen. During the time that an epidemic fever was in full force at two neighbouring places, not one of the workmen in the establishment at Montfaucon was affected by it. It did not appear that it was only the men who were habituated to the works that were thus favoured: for when, from press of business, new workmen were taken on, they did not suffer in health from the exhalations.

In confirmation of the above observations, similar cases are quoted: above 200 exhumations are made yearly at Paris, about three or four months after death; not a single case of injury to the workmen has been observed. M. Labarraque has observed, that the catgut makers, who live in a continually putrid atmosphere, arising from macerating intestines, enjoy remarkable health. Similar circumstances were remarked at the exhumations of the Cimetière des Innocens.

Whatever disease the horse may have died of, or been killed for, the workmen have no fear, adopt no precautions, and run no risk. Sometimes, when strangers are present, they pretend to be careful, but, upon close inquiry, laugh at such notions. They handle diseased as well as healthy parts *always with impunity*. They frequently cut themselves, but the wounds heal with the greatest facility, and their best remedy is to put a slice of the flesh about the wound.

On making inquiry of those to whom the horse-skins were sent, and who, besides, having to handle them when very putrescent, were more exposed to effects from diseases in the skin, they learnt that these men, also, from experience, had no fear, and never suffered injury. Horse-skins never occasioned injury to those who worked them, but in this they differed from the skins of oxen, cows, and especially sheep, which sometimes did occasion injury, though not so often as usually supposed.

CUVIER'S EXPLANATION OF ACCIDENTAL COLOURS.

M. G. Cuvier thinks, that the production of all the accidental colours may be explained by this very simple fact, that the retina which has just been subjectd to the impression of a colour, becomes, from this very circumstance, incapable of immediately receiving the impression of a fainter colour of the same kind. A very simple experiment, and one which every body has made, without reflecting upon it, confirms this truth. When toward evening, one looks to a window, he sees the wood surrounding the panes of a dark colour, while the latter are still light. If, after looking steadily for some time at the window, he turns toward the opposite side of the room, which is darker, he sees there an image of the window. This phenomenon can only be explained by admiting, that the part of the retina on which the image of the window is painted, becomes, in consequence of the vivacity of the colours of which the image was formed, incapable of receiving any impression on the part of the dark points of the opposite side of the room; there results the image seen on the wall. The phenomenon which the retina presents in this case exists more or less with respect to all our senses; each of which, after being submitted to a rather vivid impression, becomes, from that very circumstance, incapable of experiencing a weaker impression of the same nature. It is enough to eat a bit of sugar immediately before taking one's coffee, to find that the coffee is not sufficiently sweet. What takes place in this case, with reference to the sense of taste, is analogous to what was observed with respect to the sense of sight in the case of the window. The application of this to the phenomenon of accidental colours is easy. If, for example, an ace of diamonds be fixed on a card, one cannot look at it for a very short time, without letting his eyes vacillate to either side. From this moment, the eye, having become insensible to the red rays, will only see in the white of the card, the green of the band of that colour which surrounds the red. What proves the accuracy of this explanation is, that if, after looking at the red ace, one directs his eye to a distant part of the card, he sees a figure of the same form, and of a green colour, the perception of which is owing to the cause already pointed out.

RESPIRATION OF THE CRUSTACEA.

MM. Audouin, Milne, and Edwards, read lately to the French Academy of Sciences a fourth memoir "On the Anatomy and Physiology of the Crustacea." The following is the title of their memoir:—*De la Respiration aërienne des Crustacés, et des modifications que l'appareil bronchial éprouve dans les crabes terrestres* There result from the observations and experiments contained in this memoir, 1. That, in all the crustacea, the bronchiæ are fitted to perform the functions of respiratory organs, in the air as well as in water; 2. That the more or less rapid death of the aquatic species when exposed to the air depends upon various causes, of which one of the most direct is the evaporation from the bronchiæ, which produces their dessication; 3. That, consequently, one of the conditions necessary for the support of life in animals, which have bronchiæ, and live in the air, is having these organs defended against dessication; and, lastly, that these indispensable dispositions are actually met with in the tourlouroux and other land crabs, which all possess various organs destined for absorbing and keeping in reserve the quantity of water necessary for maintaining a suitable degree of moisture in the bronchiæ.

CURIOUS APPEARANCE OF THE BLOOD.

To the Editor of THE LANCET.

SIR,—Should the following case be found worthy your notice, you are at perfect liberty to insert it in your excellent publication, "THE LANCET."

Yesterday morning a patient came to me, complaining of pains in his head, chest, and back. His pursuit is that of a gardener; age 33; rather a spare fibre; temperate habits; his pulse hard and full. I advised him to lose blood; he consented, and the peculiar appearances which followed its abstraction, as a novelty, I am induced to transmit you an account of. Seven ounces of blood were taken away; but before the arm was tied up, the blood assumed a peculiarly white hue, obliterating altogether the appearance that *blood* had been drawn; for it resembled a basin of *milk* more than any thing else. Not being satisfied with its very odd appearance, I selected another basin, and took away five ounces more; which had the same complexion and character as the other. One ounce more in a separate vessel followed; and deliquium for a few minutes succeeded. A powder was given, composed of calomel and rhubarb; and, this morning, he says "he is quite well."

As the blood cooled, the *whiteness* of the serum became more and more opaque, resembling *cream*; the crassamentum in the first vessel assumed a type of inflammatory covering, with a coating of ¼ of an inch in thickness, of the ordinary buff-colour; but its body would not resist the slightest elevation without falling apart; it is of a perfectly livid hue, and less in proportionate quantity to that of serum. The liquid, in the second basin, had the same appearance in colour, but rather thinner in consistence; while the coagulum was more natural, very little inflammation being visible on its surface. The last ounce bore the same appearance as the foregoing.

As I never met with an instance of the kind before, and find only two cases recorded by "Hewson, p. 144 and 146," as something similar,—I intend to repeat the bleeding in the course of a week, in order to afford another specimen of so very curious an appearance.

I am, Sir,
Your's obediently,
GAY SHUTE, Surgeon.

Watford, Herts, July 28th, 1828.

ABUSES IN ST. BARTHOLOMEW'S HOSPITAL.

To the Editor of THE LANCET.

SIR,—I do not feel inclined to leave unnoticed a paragraph in the Weekly Excrescence of last week, under the head of "Notices to Correspondents," in which the editor politely declines inserting a letter of the "Bartholomew Pupil," in reply to my answer in THE LANCET to a former one in the Excrescence, headed "False charges against Messrs. Vincent and Earle;" I will not leave it unnoticed, because I believe the editor of the Weekly Excrescence to be afraid to publish that reply; I believe that he dare not do it, and for this plain reason, that he finds himself on the lame side of the question; I shall therefore take the liberty of telling him, that he shuffles out of the affair in a mean and dirty manner, like a cowardly boaster, whose effervescence of character shrinks back, at the hour of danger, into the insignificance of itself.

And now for a few comments upon this worthy editor's remarks; in this said paragraph he says, "That as his correspondent *fully refuted the charges* brought against Messrs. Vincent and Earle, he thought it unnecessary to publish the letter before him," and, in the next sentence, requests the "Bartholomew Pupil to bear in mind,

that when THE LANCET has once asserted an untruth, HE never has the honesty to retrace it, but *reiterates his falsehood in the face of the clearest evidence.*" Here are a pretty pair of sentences, Mr. Editor! Why, really, if the editor of the Weekly Excrescence had wished to damn himself, I do not think he could possibly have hit upon a surer method, than that of stringing these two sentences together upon this subject; for I will openly appeal to any candid inquirer, whether I have not completely overthrown every assertion brought forward by the "Bartholomew Pupil," in favour of Messrs. Vincent and Earle; and if I have not, let the "Bartholomew Pupil" openly and honestly reply to my letter, and let the editor of the Weekly Excrescence not fear to insert that reply, and I will pledge myself to do so; I shrink not from the question, but, on the contrary, court inquiry. I asserted opinions in the first instance respecting Messrs. Vincent and Earle, which they thought proper to proclaim as false, and I am now ready to stand forth in defence of those opinions on any grounds, and upon any terms, honest terms, my opponents may think proper. I own that I feel anxious to have the truth properly investigated, because I should esteem it an act of the greatest possible atrocity, to accuse Messrs. Vincent and Earle of neglect of duty, did not their conduct fully warrant me in making such accusations. However, I have affirmed that to be true, which my opponent's endeavours have failed to prove false; and should their silence prevent their being more involved in the argument than they already are, I shall esteem that silence as an acknowledgment of the truth of the assertions which I have made. In order, by the by, still further to prove the superior management of Mr. Lawrence, I would request any gentleman to go into his wards, and look over the boards of the new patients which have been admitted during his late absence, and to compare those boards with the others in the wards. Mr. Lloyd has had the care of the patients during Mr. Lawrence's absence, and there are not more than three or four boards, at most, with the diseases named on them.

Allow me to say, Mr. Editor, that I cannot help feeling highly flattered by my second letter being attributed to yourself; however, I can assure the editor of the Weekly Excrescence, and his friends, that I shall not be particularly anxious to keep my name backward, should I see the smallest necessity for its coming forward.

As to the comparing of Mr. Earle and the pupils to a bitch and her litter of blind puppies, it is untrue; the editor of the Weekly Excrescence seems really to have a difficulty in comprehending the meaning of our English language, should it not be written in his own hum-drum, monotonous style; he makes some strange blunders: I said, in effect, what I will now repeat in substance, that the terms "so kind and so attentive," were more appropriate to a bitch and her litter of blind puppies, than to a hospital surgeon and his pupils. Let the "Bartholomew Pupil" rather look for an opportunity of using the terms *honest* and *able*, when speaking of the surgeons of St. Bartholomew's, than the expressions above.

I am, Sir,
Your obedient servant,
A PUPIL OF ST. BARTHOLOMEW'S.

4th Aug. 1828.

NON-MEDICAL CORONERS.

To the Editor of THE LANCET.

SIR,—Every one who has perused your observations on the subject of "Coroners' Inquests," must own their truth, and agree that some reform is necessary in this valuable branch of medical jurisprudence. It is necessary that the evidence of a medical man should be taken and appreciated at every inquest. I believe that both these essentials are too often neglected—that medical men are frequently passed over, and that, when their evidence is taken, it is often little understood, and consequently not thought of. This points out the necessity of an alteration in this branch of the laws; and, certainly, coroners should be medical men, or should be directed to appoint a medical man to examine into the department of the evidence which belongs to medicine. A very superficial knowledge of the laws is necessary for the office of coroner. This is sufficiently evident from the fact, that very few coroners are men much versed or practised in general law. But a coroner should be fully acquainted with several branches of medicine which can only be acquired by a study of the profession. How often do we see the most absurd questions put to medical witnesses at inquests—questions, often, which cannot be answered, and which, consequently, depreciate the witness in the eyes of the public.

But there is one point to which I would call your attention, hoping that, by its being made known, coroners will, in future, not omit calling in medical men. I was lately called to see a man who was very ill: his symptoms were violent cough, difficulty of respiration, and vomiting, or expectoration, of blood; I could not ascertain which. I found him dead. Notice was given to the coroner, and I expected to be called upon

to examine the body, for the cause of his sudden death was unknown. Judge, Sir, of my surprise, on hearing, on the second day following his death, that the inquest had been held, a verdict given, and the man buried, or about to be buried. It was a case of great interest, and I was, as you may expect, surprised at not having been summoned, disappointed of an interesting dissection, and disgusted with the haste with which the affair was hurried over. But for this there is no remedy by law. If coroners are still to be chosen from the hordes of small attorneys, I trust they will show a little more respect to medical men than was here exemplified; but I sincerely trust the whole subject will soon undergo a parliamentary investigation, with a view to a thorough reform.

I am, Sir, yours obediently,
X. Y. Z.

London, August 5, 1823.

DR. FOX'S GLASS-LEECH.

To the Editor of THE LANCET.

SIR,—As it appears to be Dr. Fox's object to give every publicity to his newly-invented glass-leeches for cupping, and as the inventor may be thought to be somewhat partial to his own invention, perhaps you will allow me to bear testimony to their efficiency.

I have been in the habit of using the glass-leeches occasionally for the last ten months, and have never failed in procuring the requisite quantity of blood; and on the temple, and behind the mastoid processes, I have found them to be peculiarly advantageous, being enabled to take the full quantity at once, and in less time than it can possibly be accomplished by the common glasses, the repeated applications of which, by pressing on the arterial branches, frequently occasion considerable delay and difficulty.

In answer to a letter which I wrote to Dr. Fox, soon after the appearance of his first letter in THE LANCET, he very politely sent me a drawing and description of his glasses, by which mine were made. I have since lent patterns (some having small mouths, adapted for the temple, &c.) to Messrs. Millikin and Co., surgeons' instrument makers, 301, Strand, who now keep them on sale.

I am, Sir,
Your obedient servant,
GEORGE FREDERICK KNOX,
Surgeon-Dentist and Cupper to the
Central Infirmary, &c.
14, George Street, Adelphi,
Aug. 2, 1823.

CASE OF EXTRA-UTERINE FŒTATION, IN WHICH THE FŒTUS REMAINED IN THE ABDOMEN FORTY YEARS.

Communicated by HENRY LEE HEISKELL, M.D. *of Winchester, Va.*

THE following case occurred in the poor-house of the parish of Frederick, in Virginia.

Venus Collins, a coloured woman, late of the city of Philadelphia, became pregnant with her seventh child, which she bore until her death, which occurred in the summer of 1825. As near as could be ascertained by a reference to the records of the clerk's office, and the statements of her fellow servants (one of whom was her daughter-in-law,) she was from seventy to seventy-five years of age, and carried the fœtus forty years. During this period, and in particular the latter part of it, she enjoyed remarkably good health for one in her situation, being only occasionally incommoded by a sense of weight and bearing down in her right side, which was sometimes accompanied with slight pain. In the early part of her pregnancy, she had hydropic effusions, for which she underwent the operation of paracentesis abdominis. She had no show of the menses after this period, nor did afterwards conceive again. For several years before her death, the infirmities attendant on old age, and the difficulties of providing for herself, rendered her removal to the Poor-house necessary, where she remained until her death, which happened in consequence of an attack of dysentery.

A post-mortem examination of her body was conducted by Drs. A. S. BALDWIN and HOLLIDAY, in presence of several medical students. On making a crucial incision through the parietes of the abdomen, and turning back the flaps, a large bony tumour was found in the lower part of the epigastric region, inclining rather to the right side, and firmly agglutinated in front to the parietes of the abdomen, and behind to the small intestines. The only morbid appearances of the viscera presenting, were a diminished size of the uterus, and an obliteration of the fallopian tubes: the ovaria were not to be found.

The tumour itself was of an oblong form, which, when removed from its attachments, weighed four pounds and six ounces. The envelope formed a perfect bony hermetically sealed sac, on all sides, but rather thin at the part corresponding to the anus; for, when considerable pressure was made in the direction of its short diameter, a few drops of dark fluid made their way through the covering.

The substance of the sac or covering was of an ossific nature, of a dirty-white or cream colour, varying from two to three lines in thickness, and so resisting, that it required not only a strong knife for its division, but also a very considerable degree of strength.

On removing the sac, which had formed adhesions to several parts of the fœtus, particularly the superior part of the right thigh, a fœtus, perfect in its form and configuration, was presented, having apparently gone the full period of utero-gestation. Its position in the sac exactly resembled that of a fœtus in utero; having the chin resting upon the chest in such a manner that the face looked towards the left side; the trunk was incurvated, the legs bent upon the thighs, the thighs upon the pelvis and abdomen, the feet crossed, and the arms folded between the head and knees. Owing to the firm pressure of the sac, the abdomen and lower part of the chest received the impression of the arms and thighs; and the latter, in turn, from the same cause, were somewhat flattened.

The weight of the fœtus, divested of its covering, was three pounds and three-quarters, and measured, in its contracted state, eleven inches and one-half in length. So faultless was every limb and feature, (with the exception of the above stated,) that not one of them presented an exception worthy of special remark. The general aspect, however, of the fœtus bore evident marks of *age*, (if the remark might not be considered a contradiction.) The muscles and integuments were firmer and more consistent than in the natural state, and the latter were very generally ossified, except those portions which were covered by the foldings of the arms and thighs: consequently the integuments which partook of the ossific character had a decided preponderance over the parts which did not take on a change of structure. The pericranium was entirely in an ossified state, over which some traces of hair were discernible, and the remains of the eyelashes were distinctly perceptible.

On examining the contents of the cranium, thorax, and abdomen, the following appearances were noticed:—The brain was a soft pulpy mass of an ash colour, presenting nothing very remarkable in its appearance. The contents of the thorax and abdomen were in a singular state of preservation, as perfect as those of a stillborn child; nothing of decay or putrefaction could be discovered in any portion of them. The meconium had the usual dark appearance and consistence. The tongue was firm and ash-coloured; and the nails of the toes and fingers perfect. There were no traces of umbilical chord or placenta.

SOCIETY OF GERMAN NATURALISTS AND PHYSICIANS.

This Society has existed five years, and was principally established by Oken and Blumenbach. It consists of all German naturalists and physicians, who, by the publication of some work, have contributed to the progress of natural sciences. Meetings are held once a year during summer, at one of the principal towns of Germany, which is always fixed at the preceding meeting. The members assemble daily for several hours, and the meeting continues for about a fortnight. During this time, the collections of natural history, anatomy, &c., botanical garden, physical and chemical laboratories, &c., of the town are inspected, discourses on scientific subjects are held, and the best means considered in order to promote the national study of natural sciences. Hitherto the meetings, which were held successively at Leipsic, Dresden, Frankfort, Munich, and Berlin, have been numerously attended. Almost every important town, and every scientific society, sends some representatives; and from the liberality with which the respective governments have promoted the objects of the Society, from the zeal, freedom, and harmony with which the assemblies are conducted, and from the scientific intercourse which thus is facilitated through the whole country, we may anticipate the best success from this national institution. From what we hear, an Encyclopædia, completing all branches of natural history, and a new edition of Pliny's Works, are contemplated by the Society. The last meeting was held at Berlin; Humboldt acted as president, and Liekhenstein as secretary.

EXTIRPATION OF THE PAROTID GLAND.

This operation has recently been performed in two cases of scirrhus, by Mr. Gensoul, of Lyons. During the first operation eleven arteries were tied, the external carotid included. The wound healed within three months, and the patient at this time seemed perfectly cured. After six months he died, from frequent dietetic excesses; and the examination exhibited several disorganisations of the liver and the stomach, which, entirely independent of the previous operation, accounted for his death. No trace of the parotid was found. At the second operation, the external carotid was also tied, and the internal carotid, jugular vein, and the pneumo-gastric nerve, were laid bare up to their entrance into the

skull. The patient was perfectly cured, and enjoyed good health for three years afterwards, except a paralytic affection of the left side of the face, the portio dura of the seventh nerve having been divided during the operation.

COMMITTEE FOR INVESTIGATING THE PLAGUE.

Academie Royale de Medecine. This body has elected a committee of five members for the study of the plague in the Levant. MM. Panjet and Champollion are amongst the number. They were to embark at the end of last month at Toulon, for Alexandria. —*From La Clinique.*

ROYAL INFIRMARY, PHŒNIX PARK, DUBLIN.

Continuation of Mr. Crampton's Case of Inguinal Aneurism.

During the night of the day on which the operation was performed, the patient experienced some restlessness, with pain in the abdomen, and tenderness on pressure; these symptoms were relieved by bleeding from the arm to the extent of about sixteen ounces, after which he remained tranquil and free from pain, but did not sleep.

July 19. (Second day.) Patient particularly well; pulse full, and slightly throbbing; the veins of the limb operated upon are quite full, and its temperature equal, if not superior to that of the opposite side. Pulsation has ceased in the tumour, in the groin, and in a small aneurism which exists in the ham of the same side.

20. In the course of this day, (about fifty hours after the operation,) pulsation reappeared in the large tumour, faint and indistinct at first, but gradually growing stronger towards evening. No pulsation in the femoral artery or popliteal aneurism. The size of the inguinal aneurism appears somewhat less than it was, previous to the operation.

21. Pulsation in the tumour nearly as great as before the operation, and the peculiar aneurismal thrill is clearly perceptible. In every other respect, the patient is extremely well. He complains of want of sleep, but that is probably occasioned by the anxiety of his mind.

It became evident now, that, from some cause, the operation had failed, and as the ligature was hanging from the external wound, it gave rise to a great deal of speculation as to the cause of the return of the pulsation. Various remedies were administered, with a view to lessen the force of the circulation, which need not be mentioned here, but without avail; and on Monday, the 28th, (the eleventh day after the operation,) he suddenly complained of illness, endeavoured to raise himself in the bed, and fell dead, whilst in the act of speaking.

On the following day, about twenty hours after the man's decease, his body was examined in presence of Messrs. Colles, Wilmot, Rynd, and others, when it was found that the vessel had been tied in such manner as to divide the internal coats completely through; a small portion of lymph occupied the situation of the ligature within the vessel, and outside of it there was a larger quantity, together with about a spoonful of purulent matter. The vessel, however, was pervious into the aneurismal sac, and the ligature had disappeared altogether. One extremity of it had been seen hanging from the wound on the seventh or eighth day, and, therefore, it is supposed that the cat-gut (which had been very firmly tied with a double knot) had become macerated, and either gave way and broke before the impulse of the blood or had actually rotted. At all events it had ceased to operate, the blood flowed again into the aneurismal sac, and this burst into the wound on the eleventh day after the operation. The lips of the wound had healed so, that not a drop of blood escaped externally, but a vast quantity was found occupying the deeper parts, and passing upwards along the course of the psoas muscle.

The small aneurism in the ham was filled with a dense firm coagulum, that could scarcely be removed from the sac which contained it; and it was quite evident that the operation, which controlled the flow of blood for forty-eight hours, had cured the popliteal aneurism, although it had failed in the instance of the large one. Had the ligature remained sound for a few hours longer, it seems certain, from the lymph found within the calibre of the vessel, that it could not have remained pervious, and the operation must have succeeded in all its parts.

It is greatly to be regretted that an unforeseen circumstance should thus have influenced the termination of one of the best operations ever performed. Had the ligature been of silk, the patient would probably have recovered, and yet cat-gut has been used hundreds of times; it is preferred by many who have had great experience, and was used on the present occasion on the special recommendation of a person who had stated his having made use of it frequently, and found it invariably preferable to silk.

ST. BARTHOLOMEW'S HOSPITAL.

LARGE ANEURISM OF THE ABDOMINAL AORTA, PRODUCING COMPLETE PARALYSIS OF THE LEFT LOWER EXTREMITY.

MARY BULL, ætat. 32, a thin married woman, has always enjoyed good health previous to April, 1826, when she took fright, and suddenly jumped out of bed; it was followed by pain in the loins and back, which gradually increased in severity, and in a few weeks the secretion of urine became much diminished; her symptoms were, at this time, regarded as indicating some disease of the kidneys, and she was accordingly cupped from the loins, and alkaline and diuretic medicines were given. The pain continued, and was occasionally very severe, and she had great uneasiness in the abdomen, which seemed to her to arise from some swelling, but no tumour was felt externally. In February last, she experienced great beating and throbbing sensation in the left side, and she now lost all power of motion in the left leg, and was unable to walk; she had, for some weeks previously, great numbness and shooting pain, extending down the hip and leg.

She was received into the Hospital, under the care of Dr. Hue, in June, and then complained of severe pain in the back, preventing her sleep, and a paralysed state of the left lower extremity. She now first noticed a swelling, externally, on the left side, and just below the ribs; and the beating before complained of was now very distinct. The swelling rapidly increased in size, accompanied with severe shooting pain and sense of bursting. Fearing that some operation may be had recourse to, she had concealed the existence of the swelling for about three weeks, when the case was referred to the surgeon for examination, and the patient was removed into Mr. Lawrence's Ward.

July 8. On the left side there is a large swelling, filling up the space between the lower rib and wing of the ilium, and extending from the lumbar vertebræ to near the navel, where its edge is felt through the abdominal parietes; the lumbar portion of the swelling is prominent, and the skin is red, tense, and shining; the pulsation is sensible to the eye; it communicates a powerful impulse to the hand, and gives the feeling of forcible resistance to pressure. On applying the ear, the *bruit de soufflet* is distinctly perceptible, but this sound, and the pulsation, are less distinct in the abdominal portion of the swelling; the heart beats naturally; the pulse at the wrist is very frequent and feeble; the left leg and thigh are much wasted and contracted, and wholly deprived of motion and sensation. She is unable to lie on the right side; the pain and sense of tension in the tumour, as if it were going to burst, are severe, and prevent her taking rest; tongue clean; bowels costive, and only moved by injections. Her appetite is bad, and she is emaciated. Cold cloths to the swelling, and opium given at night to procure sleep.

20. All the syptoms are much aggravated; the tumour is considerably increased in size and more prominent; the skin is tense, of a red colour, and extremely tender and painful; the pulsation is very forcible, accompanied with loud *bruit de soufflet*. Her countenance is expressive of great anxiety, and features shrunk; pulse feeble, and very frequent. Laudanum is given at night, and repeated during the day, but it produces but little alleviation. She continued to grow worse, more feeble and exhausted, and died on the 22d of July.

Examination.

On laying open the cavity of the abdomen, an aneurismal tumour of immense size was seen occupying the left lumbar and iliac regions; it was of an oblong shape, and extended from the diaphragm, which formed its superior boundary, and part of the walls of the sac, to the wing of the left ilium. The descending colon, the left kidney, much flattened, and its ureter, were adherent to the front of the tumour; and when these were removed, its anterior and lower boundaries were formed by the psoæ muscles, expanded and thinned, and its posterior parietes by the muscles of the loins. The upper portion of the abdominal aorta, for about an inch and half in extent, was pushed on one side, and adherent to the sac, which had extended a short distance above and behind it. When the vessel was laid open, an oval aperture, about two inches in circumference, and nearly an inch in its short diameter, was seen in the posterior part of the aorta, an inch below the cœliac artery. The aorta, generally, was not dilated, and it retained its internal coat. Opposite to this aperture, the bodies of the two last dorsal, and two first lumbar, vertebræ, were ulcerated and excavated, but the intervertebral cartilages remained entire. The lining membrane of the artery was continued through the oval opening into the aneurism, and a great part of the upper portion of the cyst consisted of the extended arterial coats; these had given way, and the remaining part of the aneurismal sac was formed by the diaphragm and other surrounding parts. The aneurism contained about three pounds of coagulated blood, loose in the cavity, with fibrin of variable thickness adhering to

the sides; a large mass of firm coagulum, of considerable thickness, was deposited in the upper portion of the cyst.

ANEURISM OF THE THORACIC AORTA, BURSTING INTO THE CHEST, AND CAUSING SUDDEN DEATH.

A. B., ætat. 40, a tall robust man, was admitted into the Physician's Ward, about a fortnight ago, complaining of pain in the lumbar region, to which he had been subject for some time, and which he attributed to an injury received some months since. He was cupped from the loins, and seemed to be doing well, complaining of no particular pain or uneasiness.

On the 6th of August, he expressed himself better; but, whilst getting into bed on the evening of that day, he suddenly fell back on the bed, and immediately expired.

Examination.

On opening the chest, a large quantity of fluid and coagulated blood was found in its left cavity, and the lung was pushed upwards against the ribs. There was a large aneurismal tumour, about the size of two fists, situated in front of the vertebræ, and extending a few inches above the diaphragm, and projecting into the left and right cavities of the thorax; the sac was formed anteriorly and laterally by the reflected pleuræ, and in that part of the aneurism which bulged into the left cavity of the chest were two ruptured openings, having irregular and ragged edges, and one of them sufficiently large to admit the end of the finger; through these apertures the blood had escaped from the aneurismal sac, and caused immediate death. The tumour had extended above and behind the aorta, which lay in a kind of groove in front of it, and divided it into two equal portions. On laying open the vessel, an oval aperture, large enough to admit a small hen egg, was observed in its posterior part. The aorta was not generally dilated, but its internal tunic was irregular, and raised into slight elevations by numerous yellow depositions. This membrane was continued into the aneurismal sac for some distance around the opening, where it ended in a ragged edge; the rest of the aneurism was formed by the condensation of the surrounding parts, excepting the part at which the sac was ruptured; it was lined by firm, and, in its right half, by laminated coagulum. The bodies of four of the dorsal vertebræ were considerably absorbed, and quite rough; the intervertebral cartilages remained entire.

OPERATION OF LITHOTOMY.

On Saturday, July 26. Mr. Earle performed the operation of lithotomy, on an elderly man, who had had symptoms of stone for a considerable time. The last two years his sufferings have occasionally been severe; the inclination to make water was very frequent, and almost insupportable; the urine was at times bloody, and deposited much sediment. He was a large muscular man, and had lived freely; he was under Mr. Earle's care for some weeks previous to the operation, and, by strict regimen, &c., had been much reduced. Two calculi, each about the size of a pigeon's egg, apparently consisting of lithic acid, were extracted. The operation was very well performed. The patient has been once bled; the last week he has taken port wine daily, and nourishing diet; he is now going on favourably.

On the same day, Mr. Lloyd amputated a thigh, in a case of compound fracture of the femur. We shall notice this case more particularly on another occasion.

COMPOUND FRACTURE OF THE LEFT TIBIA, EXTENDING INTO THE ANCLE JOINT, FOLLOWED BY CEREBRAL DERANGEMENT AND DEATH.—FRACTURE OF THE RIGHT OS CALCIS.

James Barnes, aged 40, a stout man, was admitted into the Hospital, July 2, under the care of Mr. Lawrence, having jumped from a window twelve feet high on the ground, and received a transverse fracture of the tibia and fibula, about two inches above the left ancle joint. There was a small wound on the inner side of the leg, through which a portion of the tibia had been protruded; and, on examination, the internal malleolus was found to be fractured longitudinally, and extending into the joint. The os calcis of the right foot was fractured transversely. Mr. Lawrence observed, that he had once before seen the os calcis fractured, and that it had been produced in the same manner, a heavy person being thrown from a coach, and alighting on his feet.

A pasteboard splint was placed in front of the right foot and leg, so as to keep the former extended, and to relax the tendo-achillis. The left leg was laid on its side, on a padded splint, in the semiflexed position; considerable bleeding took place from the wound, but it ceased in a few hours. The edges of the wound were then brought together by adhesive straps, and the limb kept wet with cold lotion. (He had a large hydrocele on the right side.) Inflammation of the leg and foot supervened; leeches were applied on the 3d, 4th, and 5th, with great

alleviation of the inflammation, and diminution of the pain; the pulse was natural, and there had been no constitutional disturbance, and the patient appeared to be going on remarkably well.

On the 6th, the leg was of its natural colour; there was no heat nor inflammation, and he had no pain. There was, however, a very marked alteration in his appearance and manner; he did not answer questions readily, and there was great listlessness and disposition to sleep. He had slight delirium during the night.

The pulse had become feeble, 72; tongue natural; the fæces and urine were discharged involuntarily. Complained of no pain, nor uneasiness in the head. Wine and water occasionally.

Mist. camphoræ, ℥j.;
Ammon. carb. gr. v. M. ft. haust. quartis horis capiend.

On the following day, a blister was placed between the shoulders.

10. He was considerably improved; the disposition to sleep was less, and he was more sensible, and answered questions readily; pulse 90, and more full. The leg was looking very well, and he complained of no pain; there was slight discharge of bloody serum from the wound.

14. The last three days he has somewhat improved, being more sensible, and the pulse better; this morning there was increased stupor and listlessness, and he had been wandering during the night; pulse feeble; tongue natural. There was copious discharge of pus from the wound of the leg, and the leech-bites had gone into a state of ulceration. There was superficial ulceration of the back, produced by lying. Six ounces of brandy daily. The ammonia and wine to be continued.

21. The last few days he has taken scarcely any nourishment; the stupor has gradually increased, and he was in a continual dozing state; his countenance altered and vacant. There was great discharge of matter from the wound, and the ulceration, both of the leg and back, increased; he became very feeble and emaciated, and died July 24th.

Examination, four hours after death.

The arachnoid was raised by serous effusion, and the ventricles contained a large quantity of fluid. The medullary substance was of a mottled pinkish colour, arising from its very vascular state; but on slicing it, the blood did not exude from the vessels, and form the dotty appearance usually observed. The liver was firm, and of a granulated appearance.

The tibia was comminuted, and loose portions of bone, with offensive matter, were contained in the joint, which was laid open. There was a transvere fissure in the astragalus, and a portion of its cartilage, and that of the opposed surface of the fibula, was absorbed. The fibula was broken two inches above the malleolus externus. There was no union whatever of the fractured bones. The right os calcis was transversely fractured, and its upper portion displaced. The hydrocele was very large, and marked externally by a circular constriction about its middle, dividing the swelling into two unequal portions. On puncturing the lower and larger swelling, a quantity of white turbid serum flowed out, and it was then seen that the hydrocele was separated into two distinct cavities by a firm membranous septum.

DROPSY, WHICH WAS TAPPED,

Giving exit to a small quantity of Fœcal Matter, the Intestines being firmly adherent to the Peritoneum.

An elderly emaciated man, who had long been ill, was admitted into Mark's Ward several weeks ago, under the care of Dr. Hue. After having been in the Hospital some time, the Doctor requested that he might be tapped. Mr. Weekes, the house surgeon, in obedience to the order, performed the operation, and obtained about a pailful of fluid. A bandage was passed around the abdomen, and the patient put to bed. Some weeks afterwards, the Doctor requested the operation to be repeated; Mr. Weekes accordingly tapped him, believing, with Dr. Hue, that the abdomen was distended with fluid. On withdrawing the trochar, however, no water escaped, but instead of it, a small quantity of fœcal matter; the patient died on the evening of the same day. On the following morning the body was examined in the presence of Dr. Hue, and some of the pupils. The cavity of the abdomen being laid open, the intestines and convex surface of the liver were found in close contact with the abdominal muscles. The intestines were agglutinated together by deposition of lymph. The peritoneum lining the abdominal muscles was much thickened, and so intimately and firmly adhering to the intestines, that it was with great difficulty separated from them. A small aperture, corresponding with the external opening made by the trochar, was found in the adherent intestine, and in the cavity of the gut a small quantity of blood. When the adhesions were separated, and the intestines turned to one side, about two gallons of turbid fluid, in which flakes of lymph floated, were found posterior to the intestines, and in the pelvis.

GUY'S HOSPITAL.

FATAL CASE OF ANEURISM OF THE ASCENDING AORTA.—ANEURISM BY DILATATION.

James Norton, ætat. 34, of fair complexion, middle stature, and muscular, was admitted into Naaman's Ward on the 16th of May, under the care of Dr. Bright. The patient, a glass-cutter, complained of a constant pain in his breast, which he described as being situated just opposite to the space between the fifth and sixth ribs. On the right side he had first felt it about a month previous to his admission, before which time he was in perfectly good health; and his attention was more particularly directed to it, by its being attended with a distinct throbbing sensation, which, with the pain, was increased by the slightest mental or bodily exertion, especially by going up stairs. Previously, however, to the commencent of the pain, he had had a cough, which lasted but a week, and he then thought himself perfectly well. The pain not occurring until near a month after the cessation of the cough. He then applied for medical advice, and was bled seven times from the arm, but with no relief to the throbbing, and scarcely any to the pain. Leeches, also, were freely applied with the same effect. When admitted, the pain was unremitting, but was more acute at night. He had increased and difficult respiration, which was more aggravated on lying down. His countenance was pallid; the pulse was full, but regular, beating steadily at 60, and was equal in force and frequency in both arms; the appetite was indifferent; bowels tolerably regular; but he could not rest at night, unless the body was much elevated. From the situation of the pulsation, it was at first thought that it was not aneurism, but that it was some disease of the lung, which received pulsation from the heart. Percussion at first strengthened this opinion, as a dull and almost dead sound was communicated on striking that side of the chest. But upon placing the hand upon the part, a firm resistance was afforded by the pulsation of the tumour; and on the application of the stethoscope, the sound was rendered audible, although the rushing of blood into the aneurismal sac could not be distinctly heard, as is commonly the case in aneurisms. This circumstance tended to convey a doubt as to the true nature of the case.

The treatment adopted after his admission into the Hospital was strictly antiphlogistic, and consisted in repeated abstraction of blood from the arm, cupping, leeches, and the administration of febrifuge and aperient medicines, in combination with others, calculated to lessen arterial action generally; perfect rest, and strictly spare diet. This plan was persevered in for some weeks, with some little temporary benefit. The respiration was rendered more free and easy, so that he could lie down with less inconvenience and pain. The bowels were regular; the tongue white, but not furred. The pulse at the wrist remained the same. A bandage was applied to the chest, from which much comfort was experienced, by its affording support to the part. The pulsation, however, evidently became more distinct and stronger, and at length could be distinctly observed synchronous with the pulsation of the ventricles.

July 15. The patient has been gradually getting worse till this morning. For the last ten days his features have expressed intense anxiety, and the pain, which he described as having been particularly of a gnawing and wearing out kind by its regular continuance, had been more distressing. He has not rested for several nights past. Early this morning, he was seized with a kind of tickling and rising in his throat, which produced a slight coughing fit, during which not less than four pints of arterial blood were ejected. The apothecary was immediately sent for, and the man was bled to fifteen ounces. The pulse, at first rapid and bounding, soon fell under the loss of blood, and a state of alarming, and apparently fatal, collapse supervened. This state was kept up for two days, by the repeated, though less copious irruptions of blood. We shall not overstate the case, by saying that, in that short space of time, he did not lose less than eight pints of blood. We visited the patient repeatedly in the course of the day, and carefully watched his symptoms. He was ordered to take a pill, containing a grain of superacetate of lead, every four hours. The pulse, at first, was weak, and almost imperceptible, but afterwards gradually regained power. The pulsations of the tumour could scarcely be felt; and the surface of the body continued excessively pallid and cold. The hæmorrhage did not altogether cease for five days; after which time, he expectorated a considerable quantity of dark-coloured frothy mucus, mixed with coagulated blood.

22. The pulsation is again becoming more distinct, though he has decidedly less pain. Re-action has gradually supervened. The surface has become warmer, the countenance is less anxious, and the pulse quick and jerky, 120. The right arm has become slightly œdematous, and the pulsation of the radial artery, in the same arm, can scarcely be distinguished.

26. The œdema of the arm has quite disappeared, and the pulse has regained its strength and power. The skin is now hotter than natural; the tongue is furred; the bowels are irregular; and the expectoration continues the same. The pulsation of the tumour is now as strong as ever, and the pain has increased. Ordered to continue the pills, and to take a saline aperient draught every morning.

August 4. The patient has been gradually declining. Within the last few days, ascites has taken place. The difficulty of breathing and pain increased, and he lingered until Saturday evening, when he expired.

Post-mortem Examination.

The pleura of the right side was found to be very firmly adherent; the heart remained perfectly in its natural situation; the left lung was enormously engorged, and was partially emphysematous; the heart, the whole of the right lung, and descending thoracic aorta, were carefully detached, before the pericardium was cut into; the pericardium was then found to be firmly connected to the surface of the heart by condensed cellular membrane; the descending thoracic aorta was then laid open, from below upwards to its origin. Immediately on its emerging from the upper part of the left ventricle, it was found to be enormously dilated, forming an immense cavity, which, on particular examination, was discovered not to arise from a rupture of the coats of the artery, but from a dilatation of one of the sinuses of Valsalva. This dilatation extended rather anteriorly, and by its pressure had produced extensive chronic inflammation, which had indurated all the surrounding parts to a great extent, producing a complete alteration in the whole structure of the right ung. At first sight, it appeared to have made its way by ulceration into the very substance of the lung, but minute examination discovered that the pleura pulmonalis bounded the extent of the sac, and was much thickened; so much so, indeed, as to form a firm and almost cartilaginous boundary. It was apparent, however, that a part of the lung behind the pleura had become absorbed, and ulceration having taken place through the pleura, the blood had made its way into the bronchial tubes. But the hole was effectually stopped by coagula, so that injections of water forced through the bronchial tubes would not pass into the aneurismal cavity. A large quantity of freshly coagulated blood was found in the cavity, and there was, besides, an effusion of serum into the thoracic cavity. There was, here and there, an infiltration of tuberculous matter into the cavity of the right lung. The bronchial tubes, and the air cells, were gorged with bloody and frothy mucus. There was considerable serous effusion generally, into the cavity of the abdomen. The abdominal viscera presented no particular morbid appearances.

ST. THOMAS'S HOSPITAL.

FATAL CASE OF GANGRENOUS ERYSIPELAS OF THE PUDENDUM.

Laura Hicks, an infant of 14 months old, was admitted into Queen's Ward on the 31st of July, under the care of Dr. Elliotson. The mother of the child stated, that about ten days previous, she observed a small spot of redness upon the inner part of the right labium, which she attributed to "heat of the body," and, therefore, did not particularly attend to it. On Sunday last, the redness extended from this spot over the whole of the external parts of generation, and yesterday morning, (Wednesday), she observed vesicles, and since that time it had become quite black and sphacelated. The child had been in a cachectic state during the last six months, and had suffered severely from dentition. It was considerably emaciated, and had long been troubled with diarrhœa. The child was fretful and irritable in the highest degree, and was constantly moaning. The appetite was bad; the pulse excessively quick and feeble; and it scarcely ever rested at night. The tongue was furred and white. When admitted, the erysipelatous inflammation had extended into the vagina, and downwards into the perineum, and also over the integuments covering the symphysis pubis. The labia and nymphæ were completely gangrenous. A thin and ill-conditioned ichorous discharge issued from the parts, which exhaled a putrid and highly fœtid odour. There was great distress and anxiety in the countenance. Dr. Elliotson immediately ordered the child to be placed in bed, and to have a lotion, composed of the solution of the chlorate of lime, one part, and five pints of water; a small piece of lint to be dipped in this lotion, and placed between the labia. A larger piece was also to be soaked with the lotion, and laid over the whole of the gangrenous surface. She was ordered to take one drop of the tincture of opium, one drachm of the tincture of catechu, and two grains of the sulphate of quinine, every six hours; and to have a pint of strong beef tea daily.

August 1. The child has slept a little during the night, but is still very restless and irritable. She takes her beef tea with

great avidity. The gangrenous parts are not at all improved in appearance. Pergat.

2. Has slept better to-night; the parts look less inflamed. The bowels are less relaxed, the child having had but one stool since yesterday, and she is much less irritable.

3. Did not sleep so well last night as on the preceding. The surface is universally cold. The eyes are almost motionless; and the pulse at the wrist imperceptible. She lingered till the evening, when she expired. There was a slight separation of the slough on the left labium, but every other part was dry and hard. The child being immediately removed, no inspection of the body took place.

CASE OF CHOREA, SUCCESSFULLY TREATED WITH THE SULPHATE OF ZINC.

Richard Bond, æt. 13, a plump and healthy-looking boy, was admitted into Henry's Ward on the 13th of June, under the care of Dr. Scott.

He stated that, about a fortnight previous to admission, he was suddenly seized with a motion of the right arm and leg, which was preceded by sickness and vomiting. This motion continued sometimes a longer or shorter period of time; and it generally recurred early in the morning. He had no headach; the appetite was good, but the bowels were costive and irregular. He was ordered to take twelve grains of the powder of scammony, with calomel, every other morning. This produced copious and regular evacuations, and he continued to take the medicine for nearly a fortnight; at the expiration of which time the motions of the limbs were much less vehement.

24. He was ordered by Dr. Elliotson, in the absence of Dr. Scott, to omit the powder, and to take a *grain of the sulphate of zinc every six hours.*

July 1. The boy is evidently better; the motions of the leg have entirely ceased, and those of the arm have very much subsided. He has had no vomiting or sickness for a week. The dose of the medicine has been increased to two grains.

19. Much better. All motion has ceased, and he appears perfectly well. The dose of the medicine has again been increased to three grains.

August 5. He has continued quite well to the present time. The dose of zinc was increased weekly, and he at last took *six grains every six hours.*

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WORKS RECEIVED FOR REVIEW.

Supplement to the First Edition of Dr. ARNOTT's Elements of Physics, or Natural Philosophy. 8vo. pp. 31. Plates. Longman and Co.

Natural Theology; or, Evidences of the Existence and Attributes of the Deity, collected from the Appearances of Nature. By WILLIAM PALEY, D.D. Illustrated by a Series of Plates and Explanatory Notes. By JAMES PAXTON, Member of the College of Surgeons. Two Vols. 8vo. pp. 244 and 298. Oxford. J. Vincent.

Observations on the Cheltenham Waters, and the Diseases in which they are recommended. By JAMES M'CABE, M.D. 8vo. pp. 231. Cheltenham. G. A. Williams.

Military Medical Reports; containing Pathological and Practical Observations, illustrating the Diseases of Warm Climates. By JAMES M'CABE, M.D. 8vo. pp. 253. Cheltenham. G. A. Williams.

[Other Books in our next.]

TO CORRESPONDENTS.

COMMUNICATIONS have been received from Dr. Seward—Mr. Wilson—R. M.—Quiz—Don Pedro—Mr. Thomas Chalmer—An Old Correspondent—Well-Wisher—The Library Man—God save the King—Der Frieschutz.

The report of the case of "Russia," from the Glasgow Royal Infirmary, has come to hand. The author has our thanks.

We feel grateful to "Well-wisher," but have *many thousand reasons* for not changing our tactics. He has been misinformed.

Mr. P. Pry will find the "Report" in the present Number; and although *he* shrinks from attaching his name to it, *we* do not.